

**TRAFFIC ANALYSIS FOR THE
HARBOR GATEWAY CENTER MASTER PLAN
MULTI-USE COMMUNITY**

Prepared for:

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EXECUTIVE SUMMARY

The project under consideration is the development of a 450,000 square foot shopping center and a 2,517,700 square foot industrial/office park. The shopping center could contain up to 4,000 theater seats and 30,000 square feet of restaurant uses. The project site is currently occupied by a 2,419,000 square foot distribution/warehouse facility used by McDonnell Douglas Aircraft Company. Previously, the site buildings had been used for aircraft manufacturing and assembly, with a total of approximately 5,500 persons working at the site. Following project completion, the site trip generation would be approximately 29,900 daily trips with 2,496 trips occurring during the morning peak hour and 2,907 trips occurring during the afternoon peak hour. The current site uses have a potential generation of approximately 8,560 daily trips, 845 morning peak hour trips and 1,105 evening peak hour trips.

The 170.2-acre project site is located within the Harbor Gateway section of Los Angeles. The site is bounded by 190th Street on the north, the Southern Pacific Railroad tracks paralleling Normandie Avenue on the east, industrial and residential uses on the south, and Western Avenue and industrial/vacant properties on the west. Access to the shopping center would be provided via driveways along 190th Street, a driveway from Normandie Avenue which crosses the railroad tracks and internal roadways which will extend along the western edge of the site and to Normandie Avenue south of the retail site. Access to the industrial/office park would be provided by the internal roadway network, which will extend across the site and intersect with 190th Street, Normandie Avenue and Western Avenue.

This traffic study analyzes existing and future morning and afternoon peak hour traffic conditions within the area that is expected to be directly impacted by the proposed development. This traffic study also identifies the potential cumulative

traffic volume created by future related projects within the study area. Trips resulting from these related projects, as well as from the general, region-wide growth projected by SCAG, and the land-use intensifications within the City of Los Angeles projected by the City, were taken into account in the projection of future traffic conditions for Year 2006 for both with and without project scenarios.

Of the forty-one intersections analyzed in this study, thirty of the study intersections could be significantly impacted by traffic generated by the proposed project in one or both of the morning and evening traffic hours, prior to mitigation.

In order to minimize the traffic impacts of the project, a series of traffic reduction measures and roadway improvement measures was developed. All measures are considered feasible in that each is achievable within either existing public rights-of-way or the project site. The following measures are recommended to mitigate the project's significant traffic impacts to the degree feasible:

- o Compliance with Ordinance No. 168,700 (Transportation Demand Management and Trip Reduction Measures). This ordinance focuses on incorporating TDM facilities into the design of new buildings to promote alternative modes of transportation (see Appendix B). It should be followed in the design and construction of the project site and buildings.
- o Compliance with SCAQMD Rule 2202. The South Coast Air Quality Management District (SCAQMD) has adopted a rule designed to reduce the air pollution impacts of commute trips. This rule, unlike the rule it replaces, does not mandate trip reduction programs but allows individual employers to select from a variety of options. However, most employers have continued to select ridesharing programs as the most cost-effective method

of reducing air quality impacts. If site employers implement these trip reduction measures, 15 percent or more of the peak hour traffic generation from the industrial/office park component of the project could be eliminated.

- o Bus Transit Improvements. This project should work with the appropriate transit districts (i.e., Gardena Transit, Torrance Transit and MTA) to improve transit service to the site. Further, the sidewalks through the sites should be designed to provide attractive pedestrian routes to and from transit stops.
- o 1. Hawthorne Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes. Modify the signal to remove the existing eastbound right-turn phase.
- o 4. Crenshaw Boulevard and 190th Street -- Remove median islands, restripe and restrict parking along 190th Street to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 5. Crenshaw Boulevard and Del Amo Boulevard -- Restripe Del Amo Boulevard and modify the traffic signal to provide two left-turn-only lanes, a through/left optional lane and a right-turn-only lane in the westbound direction.
- o 7. Western Avenue and Artesia Boulevard -- Restripe Western Avenue and restrict parking to convert the existing northbound and southbound right-turn-only lanes to through/right optional lanes.

- o 9. Western Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and/or modify the median island and restripe the westbound approach to the intersection (i.e., the off-ramp) to provide two left-turn-only lanes and a right-turn-only lane instead of the existing two-lane configuration.
- o 10. I-405 Freeway Southbound On/Off-Ramps and 190th Street -- Flare the west leg of the intersection, restripe 190th Street, restrict parking and modify the signal to provide dual left-turn lanes in the eastbound direction.
- o 11. Western Avenue and 190th Street -- Any mitigation would require a reduction below 11 foot interior lane widths and/or acquisition of right-of-way. Therefore, no feasible mitigation is available.
- o 12. Western Avenue and 195th Street -- Fund the installation of the Automated Traffic Surveillance and Control (ATSAC) system at this location.
- o 14. Western Avenue and Del Amo Boulevard -- Restripe the eastbound approach to convert the through lane to through/left optional lane and provide east-west opposed phasing. Remove the crosswalk on the north leg. Also, fund the installation of ATSAC at this location.
- o 15. Western Avenue and Torrance Boulevard -- Any mitigation would require removal of parking, narrowing of the median containing the railroad tracks or acquisition of additional right-of-way, none of which is considered feasible. Therefore, no mitigation is available.
- o 16. Western Avenue and Carson Street -- Mitigation of this impact would require removal of parking on Carson Street for which there is a heavy demand. Therefore, no mitigation is available.
- o 17. Western Avenue and Sepulveda Boulevard -- Restrict parking to provide right-turn-only lanes in the northbound and southbound directions.

- o 18. Western Avenue and Pacific Coast Highway -- Installation of mitigation would require interior lane width of less than 11 feet or an offsetting of lanes across the intersection. Therefore no mitigation is available.
- o 19. Project Roadway and 190th Street -- Restrict parking and restripe 190th Street to provide three travel lanes plus left-turn channelization in the westbound and eastbound directions. Construct the internal project roadway to provide a three-lane northbound approach including two left-turn-only lanes and a right-turn-only lane.
- o 20. Normandie Avenue and Artesia Boulevard -- Provide dual left-turn lanes in the southbound direction by restriping Normandie Avenue and modifying the signal.
- o 22. Normandie Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and restripe the northbound approach to provide two through lanes and an exclusive right-turn-only lane to facilitate freeway access. Fund ATSAC installation at this location.
- o 23. I-405 Freeway Southbound Off-Ramp/Project Driveway and 190th Street -- Flare and restripe 190th Street to provide three travel lanes and dual left-turn lanes in the westbound direction and three travel lanes and a "pre-left-turn-lane" for Normandie Avenue in the eastbound direction. Construct the project driveway to provide dual left-turn lanes and a right-turn-only lane in the northbound direction. Install a signal with opposed northbound and southbound phasing. Fund ATSAC installation at this location.

Should an LADOT review of operations at this intersection indicate that left-turns to or from the driveway would unacceptably interfere with the ability to coordinate this signal and the signal at 190th Street and Normandie Avenue, one or more turning movements could be restricted.

- o 24. Normandie Avenue and 190th Street -- Modify the signal and railroad crossing equipment on 190th Street to provide dual left-turn-only lanes plus three travel lanes in the eastbound and westbound directions. Modify the signal equipment to provide a southbound right-turn overlap phase. Additionally, fund the installation of ATSAC at this location.
- o 25. Normandie Avenue and Project Roadway/Francisco Street -- Construct the project roadway to provide a three-lane eastbound approach including a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Modify the signal to provide opposed phasing in the eastbound and westbound directions.
- o 26. Normandie Avenue and Torrance Boulevard -- Fund the installation of ATSAC at this intersection.
- o 27. Normandie Avenue and Carson Street -- Fund the installation of ATSAC at this intersection.
- o 30. Vermont Avenue and Artesia Boulevard -- Flare and restripe Vermont Avenue and modify the signal equipment to provide dual left-turn lanes, two through lanes and a northbound right-turn-only lane in the northbound direction. Provide a northbound right-turn phase overlapping the existing westbound left-turn phase as part of the signal modifications.
- o 31. Vermont Avenue and 190th Street -- Restripe 190th Street to provide three through lanes in the eastbound and westbound directions. Fund the installation of ATSAC at this intersection.
- o 32. Vermont Avenue and Torrance Boulevard -- Restrict parking and restripe Vermont Avenue to provide a right-turn-only lane in the northbound and southbound directions.

- o 33. Vermont Avenue and Carson Street -- Restrict parking and restripe Vermont Avenue to convert the existing eastbound right-turn-only lane into a through/right optional lane.
- o 34. I-110 Freeway Southbound Off-Ramp and 190th Street -- Restripe 190th Street to provide three travel lanes in the westbound direction. Modify the signal to provide a southbound right-turn phase extension concurrent with the initiation of the eastbound through phase. Fund the installation of ATSAC at this intersection.
- o 35. I-110 Freeway Northbound On-Ramp and 190th Street -- Install a traffic signal at this location. Modify the median island, restrict parking and restripe 190th Street to provide dual eastbound left-turn lanes, including an HOV lane.
- o 36. Figueroa Street and 190th Street -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.
- o 39. Hamilton Avenue and Torrance Boulevard -- Restripe Hamilton Avenue to provide a left/right optional lane and a right-turn-only lane.
- o 40. Figueroa Street and Torrance Boulevard -- Remove the sidewalk along the south curb, restrict parking and restripe Torrance Boulevard to provide a left-turn-only lane, a through/left optional lane, and a through/right optional lane in the eastbound direction. Modify the signal to provide opposed east-west phasing.
- o 41. Harbor Freeway Southbound On-Off Ramps and Carson Street -- Restripe Carson Street to provide a right-turn-only lane in the eastbound direction.

Upon completion of the above improvements, project traffic impacts will be reduced to a level of insignificance at all but four intersections. Significant traffic impacts may also remain along area freeways.

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INTRODUCTION

The applicant, McDonnell Douglas Realty Company, plans to redevelop a 170-acre site located southwest of the San Diego Freeway and Harbor Freeway interchange in the City of Los Angeles. The proposed Harbor Gateway Center Master Plan project will be located on the parcel currently occupied by the McDonnell Douglas Aircraft Company. As shown on Figure 1, Site Vicinity Map, this site is bounded by 190th Street on the north, the Southern Pacific Railroad tracks paralleling Normandie Avenue on the east, industrial and residential properties on the south, and Western Avenue and industrial/vacant properties on the west.

As part of the environmental review process for the project, the applicant has retained Crain & Associates to assess the traffic impact of the proposed land development on the surrounding street and freeway system. This report represents the results of an analysis of existing conditions as well as projected traffic conditions after completion of the proposed project. As requested by the Los Angeles Department of Transportation, a detailed evaluation of existing and future peak hour traffic conditions has been completed at the forty-one study intersections listed below:

1. Hawthorne Boulevard and 190th Street
2. Crenshaw Boulevard and 182nd Street
3. Crenshaw Boulevard and San Diego Freeway southbound on/off-ramps
4. Crenshaw Boulevard and 190th Street
5. Crenshaw Boulevard and Del Amo Boulevard
6. San Diego Freeway northbound on/off-ramps and 182nd Street
7. Western Avenue and Artesia Boulevard
8. Western Avenue and 182nd Street

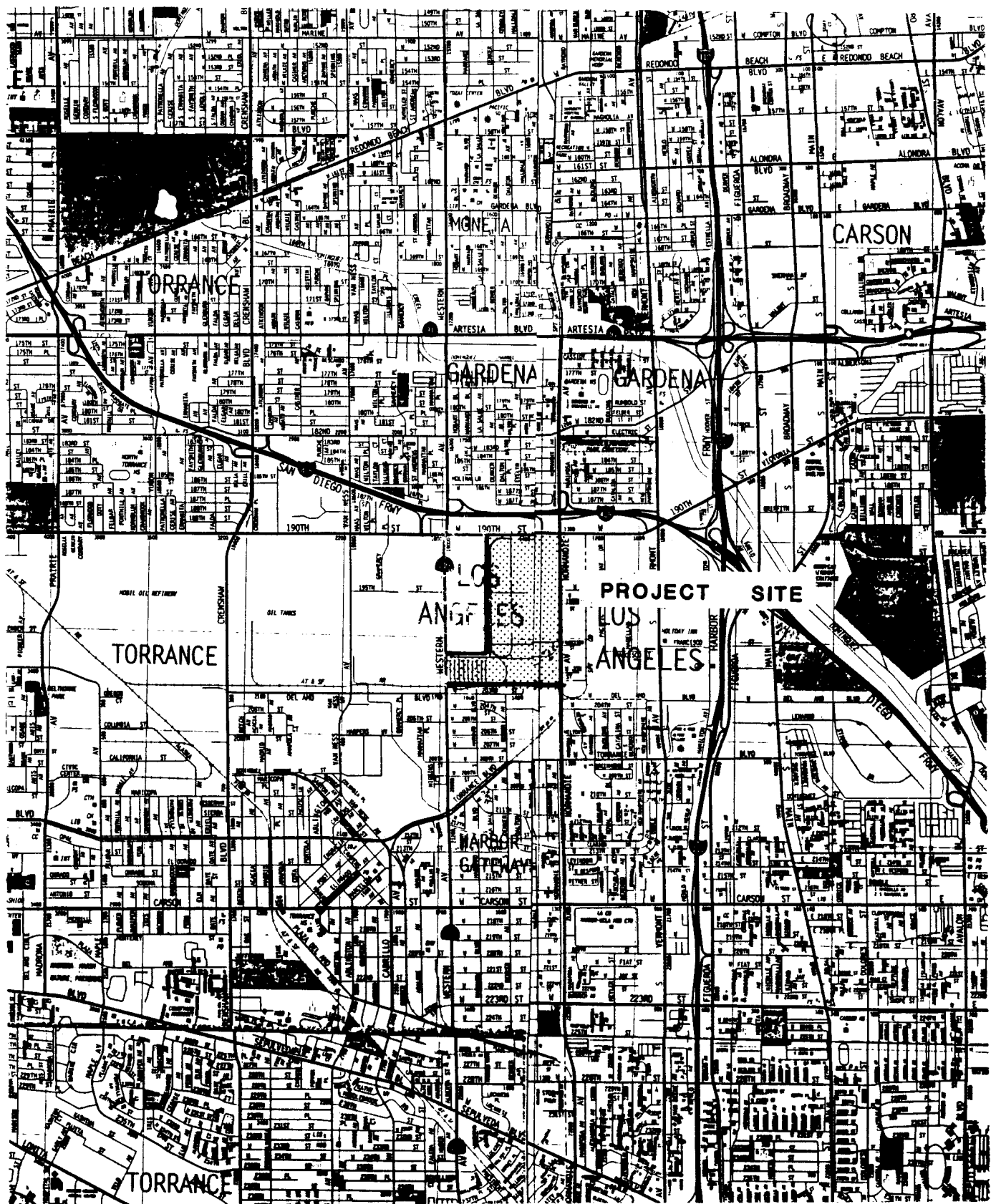


FIGURE 1

PROJECT VICINITY MAP



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9. Western Avenue and San Diego Freeway northbound on/off-ramps
10. San Diego Freeway southbound on/off-ramps
11. Western Avenue and 190th Street
12. Western Avenue and 195th Street
13. Western Avenue and Project Driveway
14. Western Avenue and Del Amo Boulevard
15. Western Avenue and Torrance Boulevard
16. Western Avenue and Carson Street
17. Western Avenue and Sepulveda Boulevard
18. Western Avenue and Pacific Coast Highway
19. Project Driveway and 190th Street
20. Artesia Boulevard and Normandie Avenue
21. Normandie Avenue and 182nd Street
22. Normandie Avenue and San Diego Freeway northbound on/off-ramps
23. San Diego Freeway off-ramp and 190th Street
24. Normandie Avenue and 190th Street
25. Normandie Avenue and Project Driveway/Francisco
26. Normandie Avenue and Torrance Boulevard
27. Normandie Avenue and Carson Street
28. Normandie Avenue and Sepulveda Boulevard
29. Normandie Avenue and Pacific Coast Highway
30. Vermont Avenue and Artesia Boulevard
31. Vermont Avenue and 190th Street
32. Vermont Avenue and Torrance Boulevard
33. Vermont Avenue and Carson Street
34. Harbor Freeway southbound off-ramp and 190th Street
35. Harbor Freeway northbound on-ramp and 190th Street

- 36. Figueroa Street and 190th Street
- 37. Hamilton Avenue and Harbor Freeway southbound on/off-ramps
- 38. Figueroa Street and Harbor Freeway northbound on/off-ramps
- 39. Hamilton Avenue and Torrance Boulevard
- 40. Figueroa Street and Torrance Boulevard
- 41. Harbor Freeway southbound on/off-ramps and Carson Street

These study intersections are within the area near the project site and are the locations most likely to be directly impacted by the project's traffic generation.

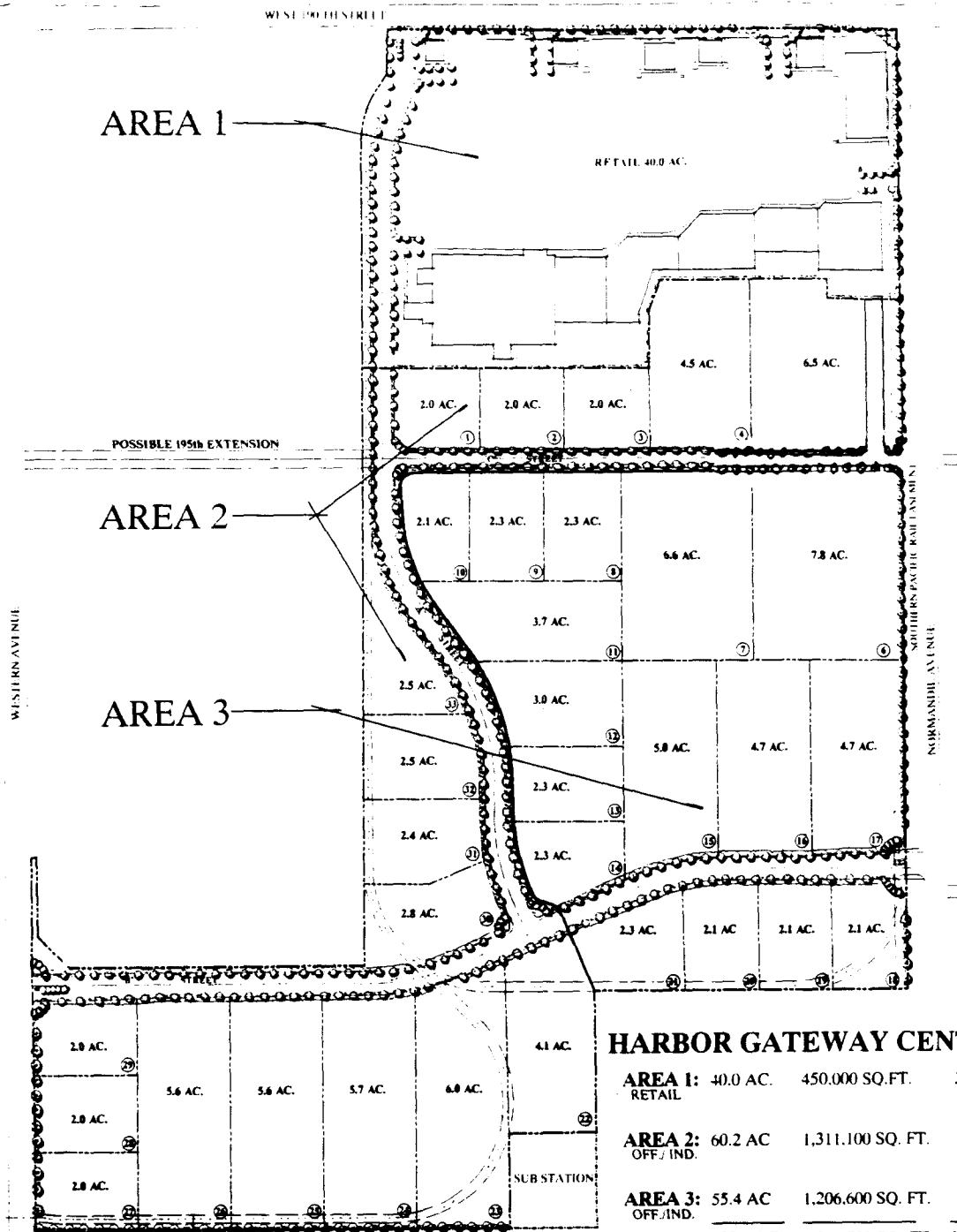
PROJECT DESCRIPTION

The project under consideration is the development of 170 acres southwest of the intersection of the San Diego Freeway and Harbor Freeway. The multi-use development plan consists of a 450,000 square foot shopping center on 42.1 gross acres and a 128.1 gross acre industrial/office park. Development in the industrial/office park could consist of up to 2,010,700 square feet of industrial park uses and up to 507,000 square feet of office park uses. The shopping center has been assumed to include up to 4,000 theater seats.

The site is currently occupied by a complex of industrial buildings totaling 2,419,000 square feet. These buildings are occupied by the McDonnell Douglas Aircraft Company. Until recently, the buildings were used for aircraft manufacturing and assembly, with approximately 5,500 employees working at the site. Currently, the buildings are used as a warehousing and distribution facility. All existing buildings would be removed from the site as part of the project.

Access to the site will be provided from 190th Street, Normandie Avenue, and Western Avenue. As shown in Figure 2, an internal roadway system will intersect each of these roadways. Additionally, access via an extension of 195th Street across the adjacent vacant site to the west, formerly used by Lockheed Aircraft, could be provided as part of the redevelopment of that site. Individual industrial and office parcels will, in general, receive all access from this internal roadway system. The exception is three parcels in the southwest corner of the site which will receive direct access from Western Avenue.

In addition to driveways to be located along the main north-south internal roadway, the project's shopping center would receive direct access from 190th Street and



HARBOR GATEWAY CENTER

AREA 1: 40.0 AC.	450,000 SQ. FT.	2.1 ROAD AC.
RETAIL		
AREA 2: 60.2 AC	1,311,100 SQ. FT.	10.3 ROAD AC.
OFF./IND.		
AREA 3: 55.4 AC	1,206,600 SQ. FT.	2.2 ROAD AC.
OFF./IND.		
TOTAL 155.6 AC.	2,967,700 SQ. FT.	14.6 ROAD AC.

GROSS ACRES 170.2

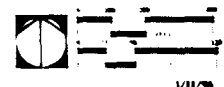
EXISTING DEVELOPMENT 2,419,000 SQ. FT.
TO BE DEMOLISHED

NET NEW DEVELOPMENT 548,700 SQ. FT.

CONCEPT MAP

Harbor Gateway Center
McDonnell Douglas Realty Co.

FIGURE 2



PROJECT SITE PLAN



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Normandie Avenue. The 190th Street driveways would include a signalized driveway located opposite the southbound San Diego Freeway off-ramp, although some turning movements to and from this driveway could be restricted. The Normandie Avenue access to the retail center would be provided via a crossing of the Southern Pacific Railroad tracks leading directly to the center, in addition to the two other railroad crossings serving the overall internal street network.

ENVIRONMENTAL SETTING

As described previously, the site of the Harbor Gateway Shopping Center and Industrial Office/Park is situated in the Torrance-Gardena Corridor District of the City of Los Angeles. This area is served by three regional freeway facilities: the San Diego Freeway, the Harbor Freeway and the Artesia Freeway. This area once contained heavy industrial and oil refining facilities with surrounding, interspersed residential and agricultural areas. In recent years, new development in this area has been generally of the commercial office, office park and industrial park types. Some of this development (such as TRW) is oriented toward the remaining aerospace industry located in Torrance, Redondo Beach, and El Segundo. Other developments (such as offices for the Toyota and Nissan auto import/distribution companies) are oriented toward the Los Angeles-Long Beach Harbor facilities. This area is also well-served by other modes of transportation. Aside from the existing surface streets and freeway systems with good transit services, the harbor facilities, Los Angeles International Airport and several major rail facilities are located nearby.

The existing regional freeway system provides excellent access to this site. The project site is conveniently linked with Los Angeles International Airport (approximately 6 miles to the northwest) via the San Diego Freeway, and with Downtown Los Angeles (approximately 15 miles to the north) via the Harbor Freeway. San Pedro and the Los Angeles Harbor, approximately 7 miles to the south, are also conveniently accessible via the Harbor Freeway. Direct ramp access for the San Diego Freeway is provided by the Western Avenue and Normandie Avenue interchanges. Direct access to the Artesia and Harbor Freeways is provided via Artesia Boulevard to the north, 190th Street to the east and Torrance Boulevard to the south.

Streets and Highways

Two of the most important east-west highway facilities serving the project site and surrounding areas are 190th Street and Artesia Boulevard. Both streets are designated as major highways. 182nd Street is an important secondary arterial located approximately midway between 190th Street and Artesia Boulevard. Other important east-west arterials in this area are Torrance Boulevard and Carson Street, both to the south of the project site.

In the project vicinity, 190th Street is generally 85 feet wide. 190th Street operates as a four-lane arterial with left-turn channelization provided at all intersections. Double left-turn lanes have been provided on the eastbound approach at Western Avenue, and right-turn-only lanes have been installed where the demand is high and where there is sufficient room to accommodate the additional lane. During the morning and afternoon peak traffic periods, parking prohibitions are utilized so that 190th Street from west of Western Avenue to east of the Harbor Freeway operates as a six-lane facility, in order to more effectively handle the heavier peak traffic demands. The southbound San Diego Freeway off-ramp intersects 190th Street opposite the project site. This ramp, where it intersects with 190th Street, is 36 feet wide, providing for a two-lane approach, with one left-turn-only lane and one right-turn-only lane. This approach is presently controlled by a STOP sign.

Artesia Boulevard, from Normandie Avenue to just west of Western Avenue, is a six-lane highway which becomes a four-lane facility to the west. A typical cross-section of this highway includes two (divided) 35-foot roadways with a 14-foot wide raised median which provides for left-turn channelization at all intersections. Artesia Boulevard transitions directly into the Artesia Freeway immediately east of Vermont Avenue.

Del Amo Boulevard to the west of Western Avenue is 71 feet wide, and to the east is designated as 203rd Street and is 32 feet wide. This street operates as a two-lane facility in each direction with left-turn channelization provided at major intersections. The roadway is discontinuous throughout the area to the east of Western Avenue.

Torrance Boulevard is a four-lane highway west of the Harbor Freeway and becomes a two-lane facility and ends to the east of Main Street. Left-turn channelization is provided at all intersections. A typical cross-section of this highway to the west of the Harbor Freeway is 60 feet in width.

Two of the most prominent north-south highway facilities in the study area are Western Avenue and Vermont Avenue. Both of these arterials have been designated Major Highways on the City's General Plan. Other important north-south routes in this area include Crenshaw Boulevard to the west and Figueroa Street and Normandie Avenue to the east.

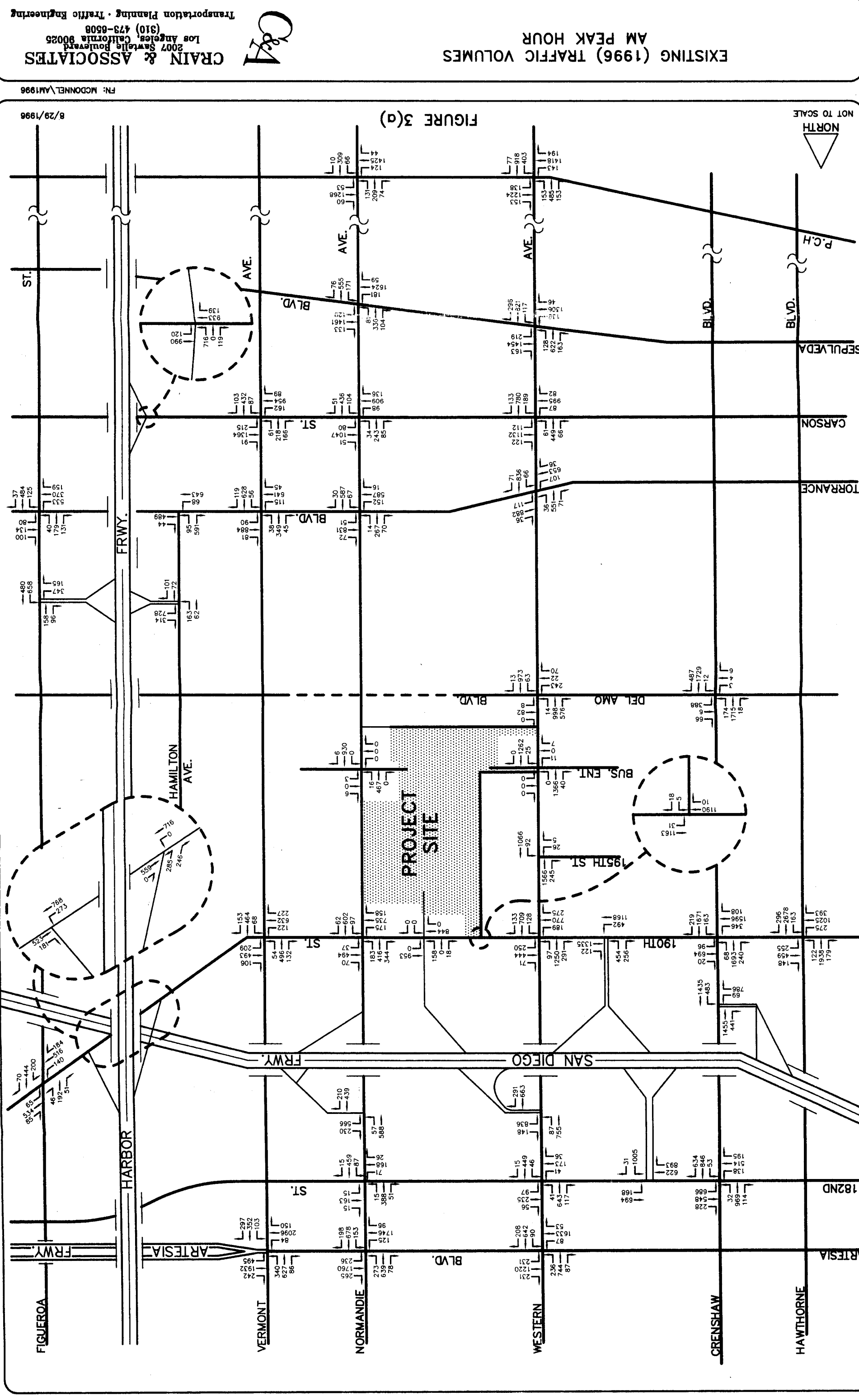
Western Avenue presently operates as a four-lane facility throughout this area, although localized improvements at 190th Street have made it possible to provide three through lanes in each direction. Double left-turn lanes for northbound traffic desiring to turn west onto 190th Street towards the southbound San Diego Freeway on-ramp are also provided. Dual southbound left-turn lanes are provided as well. North of 190th Street, Western Avenue is 110 feet wide, but tapers to an 84-foot width further to the north. South of 190th Street, Western Avenue is 98 feet wide, and provides three travel lanes in each direction. Further to the south, Western Avenue provides two northbound and three southbound travel lanes.

Vermont Avenue, throughout the study area, is fully developed to a width of 80 feet, except along the east side in front of Ascot Park (between 182nd Street and the San Diego Freeway) where the shoulder area remains unimproved. This arterial provides for two lanes of traffic in each direction with left-turn channelization provided at all intersections. The on-ramp to the northbound San Diego Freeway is located along Vermont Avenue approximately 380 feet north of 190th Street. This ramp is 28 feet wide at Vermont Avenue, but narrows to a single lane before it merges with the freeway. As part of their ramp metering system, Caltrans presently meters this on-ramp during peak hours. Although the ramp queues are often substantial, they generally do not impact surface street traffic flow along Vermont Avenue.

Normandie Avenue presently operates as a four-lane facility throughout the study area, with left-turn channelization at intersections. Immediately north and south of 190th Street, Normandie Avenue is 72 feet wide but is narrower further to the south. A southbound on-ramp for the San Diego Freeway is provided just north of 190th Street on Normandie Avenue. Northbound on- and off-ramps to the San Diego Freeway are also provided further to the north.

Existing Traffic Volumes

Traffic volume count data was obtained from the City of Los Angeles and Caltrans. New counts were conducted by Crain & Associates at all study locations where recent counts were not available. The counts were adjusted to reflect full operation of the project site as a warehouse facility. The results were used to determine the existing traffic and turning movement volumes at each of the study locations during the AM and PM peak periods. The AM peak hour traffic volumes at the study intersections are summarized in Figure 3(a) for 1996 conditions. The corresponding PM peak hour volumes are shown in Figure 3(b).



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FILE: MCDONNELL\AM1996
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FIGURE 3(a)

NOT TO SCALE

NORTH

P.C.H.

BLVD.

SEPULVEDA

CARSON

TORRANCE

DEL AMO

190TH ST

SAN DIEGO

182ND

ARTESIA

HAWTHORNE

CRENSHAW

WESTERN

NORMANDIE

VERMONT

FIGUEROA

HARBOR

HAMILTON

AVE.

BLVD.

ST.

BLVD.

BLVD.

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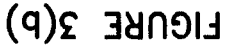
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Public Transportation

The site is served by two bus lines which are operated by Gardena Transit (Line 2) and Torrance Transit (Line 6). These bus lines operate along the roadways adjacent to the proposed project site. These and other connecting bus lines offer extensive access to adjacent South Bay communities and also provide convenient, direct access into Downtown Los Angeles.

The following bus lines operate adjacent to the proposed development:

Gardena Line 2. This "rectangular" route involves primarily north-south travel on Western Avenue, Normandie Avenue, and Vermont Avenue, between Pacific Coast Highway on the south and Imperial Highway on the north. Half-hour headways are typical in both directions during all hours of operation.

Torrance Line 6. This linear line provides service between the Del Amo Center and Torrance Civic Center to the southwest and Cal State Dominguez Hills and the Artesia Station of the Metro Blue Line to the east. In the vicinity of the project site it operates along 190th Street. It provides service on half-hour headways in both directions during peak periods on Mondays through Fridays. No midday, night or weekend service is provided.

The following bus lines also operate in the study area, although somewhat further away from the project site than would be considered within normal walking distance for transit access:

Torrance Line 1. This bus line provides service between the Del Amo Fashion Square regional shopping center in Torrance and Union Station in Downtown Los Angeles. This route crosses on Carson Street to Vermont Avenue, then

proceeds north to Gardena Boulevard and then north on Figueroa Street to the Harbor Freeway at El Segundo Boulevard. Buses exit the freeway at Martin Luther King, Jr. Boulevard and then traverse the Downtown Los Angeles area to the terminus at Union Station. Buses on this route operate on a typical headway of one hour, but service with half-hour headways is provided during peak commuter periods (6:00 - 9:00 AM and 3:00 - 6:00 PM). Access for the handicapped is provided on all of the buses operated on this line.

MTA Line 130. This line operates east-west between King Harbor in Redondo Beach and the Fullerton Park-and-Ride Lot at Orangethorpe Avenue and Magnolia Avenue. Intermediate portions of this route run primarily along Artesia Boulevard, but the route diverts south at Vermont Avenue, turning easterly at 190th Street. Daylight service is provided on typical headways of one hour, several days per week. Access for the handicapped is provided on all of these buses.

MTA Line 445. This line offers peak hour commuter service between San Pedro and Alpine Village (approximately one mile southeast of the project site), and Downtown Los Angeles. Most of this route runs along the Harbor Freeway but traverses Downtown on surface streets. Five buses each provide service Monday through Friday, into Downtown during the peak AM commuter period and outbound during the PM peak period.

The bus lines discussed above provide important service to the existing industrial and residential areas, and office facilities located near the proposed development.

Analysis of Existing Conditions

The traffic analysis was performed through use of established traffic engineering techniques. The existing traffic volumes described earlier were utilized so as to reflect any recent changes in traffic demand patterns. Other data pertaining to intersection geometrics, transit stop locations, parking related curb restrictions, pedestrian facilities, and signal operations were obtained through field surveys of the study area street system.

The Critical Movement Analysis (CMA) methodology used for the analysis and evaluation of traffic conditions at each study intersection is based on procedures outlined in Circular Number 212 of the Transportation Research Board¹. In the discussion of the CMA method for signalized intersections, procedures have been developed for grading the operational quality of an intersection in terms of the "Level of Service" (LOS) which describes different traffic flow characteristics. LOS A to C operate quite well. LOS D typically is the level for which a metropolitan area street system is designed. LOS E represents volumes at or near the capacity of the street which might result in stoppages of momentary duration and fairly unstable flow. LOS F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages of long duration.

A determination of the LOS at an intersection, where traffic volumes are known or have been projected, can be obtained through a summation of the critical movement volumes: the highest combination of conflicting movements which must be accommodated at that intersection. Once the sum of critical movement volumes has been obtained, the values in Table 1 can be used to determine the applicable LOS.

¹ Interim Materials on Highway Capacity, Circular Number 212, Transportation Research Board, Washington, D. C., 1980.

Table 1
Critical Movement Volume Ranges*
For Determining Levels of Service

<u>Level of Service</u>	<u>Maximum Sum of Critical Volumes (VPH)</u>		
	<u>Two Phase</u>	<u>Three Phase</u>	<u>Four or More Phases</u>
A	900	855	825
B	1,050	1,000	965
C	1,200	1,140	1,100
D	1,350	1,275	1,225
E	1,500	1,425	1,375
F	-----Not Applicable-----		

* For planning applications only, i.e., not appropriate for operations and design applications. Also, a computerized traffic signal coordination systems, such as the Automated Traffic Surveillance and Control (ATSAC), increase these values by approximately seven percent.

“Capacity” represents the maximum volume of vehicles in the critical lanes which has a reasonable expectation of passing through an intersection in one hour, under prevailing roadway and traffic conditions. For planning purposes, capacity equates to the maximum value of LOS E, as indicated in Table 1. The CMA values used in this study were calculated by dividing the sum of critical movement volumes by the appropriate capacity value for the type of signal control present or proposed at the study intersections. The Level of Service values are defined as a range of CMA values and shown in Table 2.

Table 2
Level of Service
As a Function of CMA Values

<u>Level of Service</u>	<u>Interpretation</u>	<u>Range of CMA Values</u>
A	Uncongested operations; all vehicles clear in a single cycle.	≤ 0.60
B	Same as above.	$> 0.60 \leq 0.70$
C	Light congestion; occasional backups on critical approaches.	$> 0.70 \leq 0.80$
D	Congestion on critical approaches, but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing lines formed. Used as the desirable level for design in many cities.	$> 0.80 \leq 0.90$
E	Severe congestion with some long-standing lines on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements.	$> 0.90 \leq 1.00$
F	Forced flow with stoppages of long duration.	> 1.00

By applying this analysis procedure to the study intersections, the CMA value and the corresponding LOS for existing traffic conditions were calculated. Those values for existing (1996) AM and PM peak hour conditions are shown in Table 3.

Table 3
Critical Movement Analysis Summary
Existing Traffic Conditions

	<u>Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
		<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>
1.	Hawthorne Blvd. and 190th St.	1.010	F	1.033	F
2.	Crenshaw Blvd. and 182nd St.	0.909	E	1.065	F
3.	Crenshaw Blvd. and San Diego Fwy. S/B on/off-ramps	0.997	E	0.910	E
4.	Crenshaw Blvd. and 190th St.	1.237	F	1.240	F
5.	Crenshaw Blvd. and Del Amo Blvd.	0.807	D	0.868	D
6.	San Diego Fwy. N/B on/off-ramps and 182nd St.	0.880	D	0.877	D
7.	Western Ave. and Artesia Blvd.	0.982	E	0.988	E
8.	Western Ave. and 182nd St.	0.418	A	0.605	B
9.	Western Ave. and San Diego Fwy. N/B on/off-ramps	0.607	B	0.735	C
10.	San Diego Fwy. S/B on/off-ramps and 190th St.	1.063	F	0.975	E
11.	Western Ave. and 190th St.	0.712	C	0.915	E
12.	Western Ave. and 195th St.	0.481	A	0.391	A
13.	Western Ave. and Project Dwy.	0.354	A	0.410	A
14.	Western Ave. and Del Amo Blvd.	0.707	C	0.747	C
15.	Western Ave. and Torrance Blvd.	0.625	B	0.716	C
16.	Western Ave. and Carson St.	0.777	C	1.023	F
17.	Western Ave. and Sepulveda Blvd.	0.991	E	1.080	F
18.	Western Ave. and Pacific Coast Hwy.	0.964	E	0.997	E
19.	Project Dwy. and 190th St.	0.428	A	0.729	C
20.	Normandie Ave. and Artesia Blvd.	0.874	D	1.002	F
21.	Normandie Ave. and 182nd St.	0.311	A	0.513	A

Table 3 (cont.)
Critical Movement Analysis Summary
Existing Traffic Conditions

	<u>Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
		<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	0.519	A	0.561	A
23.	San Diego Fwy. S/B off-ramp and 190th St.	0.470	A	0.839	D
24.	Normandie Ave. and 190th St.	0.665	B	0.930	E
25.	Normandie Ave. and Project Dwy./ Francisco St.	0.329	A	0.341	A
26.	Normandie Ave. and Torrance Blvd.	0.617	B	0.619	B
27.	Normandie Ave. and Carson St.	0.600	A	0.811	D
28.	Normandie Ave. and Sepulveda Blvd.	0.708	C	0.770	C
29.	Normandie Ave. and Pacific Coast Hwy.	0.502	A	0.561	A
30.	Vermont Ave. and Artesia Blvd.	0.913	E	0.883	D
31.	Vermont Ave. and 190th St.	0.716	C	1.013	F
32.	Vermont Ave. and Torrance Blvd.	0.673	B	0.740	C
33.	Vermont Ave. and Carson St.	0.747	C	0.853	D
34.	Harbor Fwy. S/B off-ramp and 190th St.	0.429	A	0.759	C
35.	Harbor Fwy. N/B on-ramp and 190th St.	0.446	A	0.895	D
36.	Figuerroa St. and 190th St.	0.486	A	0.737	C
37.	Hamilton Ave. and Harbor Fwy. S/B on/off-ramps	0.423	A	0.423	A
38.	Figuerroa St. and Harbor Fwy. N/B on/off-ramps	0.694	B	0.786	C
39.	Hamilton Ave. and Torrance Blvd.	0.743	C	0.673	B
40.	Figuerroa St. and Torrance Blvd.	0.667	B	0.768	C
41.	Harbor Fwy. S/B on/off-ramps and Carson St.	0.850	D	0.738	C

PROJECT TRAFFIC

The following section contains information describing the vehicular trip generating characteristics of the proposed project. It also presents the methodology used to estimate the trip generation, distribution and assignment of the project traffic.

Traffic Generation

Traffic-generating characteristics of the land uses similar to the proposed project have been surveyed and documented by the Institute of Transportation Engineers (ITE). Those studies have indicated that land uses of the size associated with the proposed project generally exhibit the following trip-making characteristics.

Table 4
Project Trip Generation Formulas

Shopping Center - (per 1,000 sq. ft.)

Daily: $\ln(T) = 0.625 \ln(A) + 5.985$
AM Peak Hour: $\ln(T) = 0.589 \ln(A) + 2.378$; I/B = 63%, O/B = 37%
PM Peak Hour: $\ln(T) = 0.637 \ln(A) + 3.553$; I/B = 50%, O/B = 50%

Movie Theater - (per seat)

Daily: $T = 0.48(A)$
AM Peak Hour: $T = 0.03(A)$; I/B = 63%, O/B = 37%
PM Peak Hour: $T = 0.06(A)$; I/B = 64%, O/B = 36%

Industrial Park - (per 1,000 sq. ft.)

Daily: $T = 4.949 \ln(A) + 765.587$
AM Peak Hour: $\ln(T) = 0.818 \ln(A) + 0.916$; I/B = 82%, O/B = 18%
PM Peak Hour: $T = [(1.027/A) + 0.00064]^{-1}$; I/B = 21%, O/B = 79%

Office Park - (per 1,000 sq. ft.)

Daily: $T = 0.835 \ln(A) + 3.435$
AM Peak Hour: $T = 0.818 \ln(A) + 1.679$; I/B = 89%, O/B = 11%
PM Peak Hour: $T = 0.825 \ln(A) + 1.418$; I/B = 15%, O/B = 85%

Warehouse/Distribution Center - (per 1,000 sq. ft.)

Daily: $T = 3.68(A) + 342.65$
AM Peak Hour: $T = 0.382(A) + 79.314$; I/B = 72%, O/B = 28%
PM Peak Hour: $T = 0.488(A) + 74.974$; I/B = 35%, O/B = 65%

Accordingly, on the basis of the traffic generation formulas in Table 4, the projected amount of new traffic volume that could be generated by the proposed mixed-use project is shown in Table 5. Appendix A separates this generation by project phase. It should be noted that Table 5 and Appendix A contain standard internal trip generation and pass-by trip adjustments. These reflect that many of the trips to and from the site will utilize more than one facility and/or will be made as part of a larger trip which would have traveled past the site whether or not the center was present.

Trip Distribution

The next step in the process was the determination of the geographic distribution of project trips. A primary factor affecting trip direction is the relative distribution of the housing from which employees of the proposed business/industrial park and patrons of the shopping center would be drawn. Each trip to and from the project site will be linked to another site somewhere in the region. These trip linkages are analyzed by the City of Los Angeles Framework computerized traffic model. This model considers the land-use patterns throughout the Southern California area to estimate current trip-making patterns. It also considers future land-use growth patterns to determine how trip linkages and travel patterns may change over time, due to shifts in the housing and/or employment base locations. In particular, the model considers the amount of housing and employment growth or decline within each subarea comprising the modeled area to determine changes in the distance each area's residents must travel to find adequate employment opportunities.

The estimated directional trip distribution resulting from this analysis is shown in Table 6.

Table 5

Project Traffic Generation

Land Use Category	Size (Sq. Ft.)	Daily Traffic	AM Peak Hour		PM Peak Hour			
			In	Out	In	Out	Total	
Shopping Center Gross Generation								
Retail	385,000	15,010	212	125	337	712	711	1,423
Theater, 4,000 seats	65,000	1,930	76	44	120	154	86	240
Subtotal	450,000	16,940	288	169	457	866	797	1,663
Less Shopping Center Internal/Pass-By Trips								
Retail (1%/20%)		(3,000)	(42)	(25)	(67)	(142)	(142)	(284)
Theater (10%/10%)		(390)	(15)	(9)	(24)	(31)	(17)	(48)
Subtotal		(3,390)	(57)	(34)	(91)	(173)	(159)	(332)
Net Shopping Center Generation								
		13,550	231	135	366	693	638	1,331
Shopping Center								
Office Park	450,000	13,550	231	135	366	693	638	1,331
Industrial Park	507,000	5,630	779	96	875	106	598	704
	2,010,700	10,720	1,105	150	1,255	131	741	872
Site Generation								
	2,967,700	29,900	2,115	381	2,496	930	1,977	2,907
Less Without Project Site Generation								
Warehouse	(2,419,000)	(8,560)	(608)	(237)	(845)	(387)	(718)	(1,105)
Net Site Generation								
	548,700	21,340	1,507	144	1,651	543	1,259	1,802

Table 6
Directional Regional Trip Distribution

<u>Direction</u>	<u>Percentage of Trips</u>
North	30%
South	30
East	25
West	<u>15</u>
	100%

Traffic Assignment

The City of Los Angeles Framework computerized traffic model was utilized to assign project-related traffic to individual roadways within the study area. In doing so, the model accounted for the level of congestion on each roadway and determined which travel path produced the shortest travel time for each trip. The results of this computerized assignment were carefully examined for "reasonableness", but no adjustments were considered necessary to reflect likely travel paths. It should be noted that the computer model assumes drivers will follow the most direct, rational path. The direct path methodology has been shown to produce the most reliable overall traffic projections. Further, this procedure concentrates traffic volumes and any necessary roadway improvements on the preferred (Major) routes, rather than encouraging the use of minor routes. The results of the computerized traffic assignment provides the necessary level of detail to conduct the traffic analysis. The resulting project trips on the surrounding roadway system are shown in Figures 4(a) and 4(b).

Parking and Access

Parking lots/structures supporting the individual uses will be constructed as build out of the multi-use development is completed. All parcels will be provided sufficient parking to meet code requirements within that parcel. For the shopping center, this



PROJECT TRAFFIC VOLUMES
PM PEAK HOUR

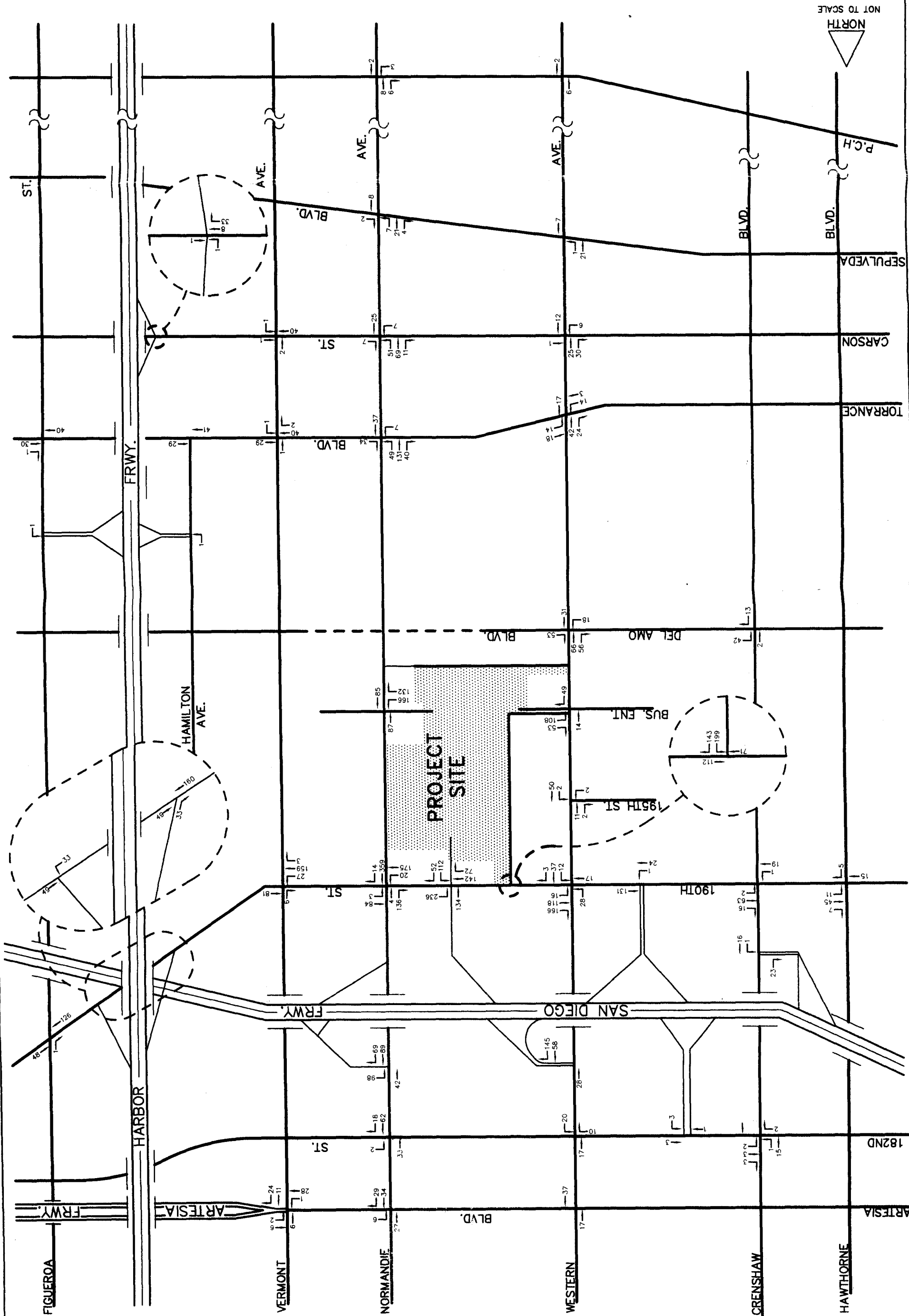
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2007 Sawtelle Boulevard
Los Angeles, California 90025
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Transportation Planning - Traffic Engineering



FN: MCDONNEL\PM\PROVOL

10/22/1996

FIGURE 4(b)



may include consideration of shared parking between the theater, restaurant and retail uses. As shown in Appendix C, the highest demand for parking at the shopping center, as it is currently envisioned, would be just under 1,800 spaces. This maximum demand would occur on weekend afternoons in December.

Access to the site will be provided from 190th Street, Normandie Avenue, and Western Avenue. As shown in Figure 2, an internal roadway system will intersect each of these roadways. Additionally, access via an extension of 195th Street across the adjacent vacant site to the west, formerly used by Lockheed Aircraft, could be provided as part of the redevelopment of that site.

Individual industrial and office parcels will, in general, receive all access from this internal roadway system. As an exception, up to three industrial/office parcels could also receive direct access from the surrounding street system. These parcels are located in the southwest corner of the project and would receive direct access from Western Avenue.

The project's shopping center would receive direct access from 190th Street and Normandie Avenue in addition to driveways to be located along the main north-south internal roadway. The 190th Street driveways would include a signalized driveway located opposite the southbound San Diego Freeway off-ramp, although some turning movements to and from this driveway could be restricted. The Normandie Avenue access would be provided via a crossing of the Southern Pacific Railroad tracks leading directly to the Center, in addition to the two other railroad crossings serving the overall internal street network.

In addition to the shopping center driveways, two other railroad crossings would be used to access the project site. One would be a new access roadway in alignment with Knox Street and 195th Street. The other would be an upgrade of the existing driveway accessing the site opposite Francisco Street. Since the Southern Pacific

Railroad track involved in all of these crossings is a very lightly used rail line, these crossings are considered appropriate.

The intersections of the major project access roads and driveways with the public street system would be signalized. A total of six locations are proposed to be signalized, including:

- o Western Avenue and Project Roadway (existing signal)
- o 190th Street and Project Roadway (relocated signal)
- o 190th Street and San Diego Freeway Southbound Off-Ramp/Shopping Center Drive (new signal)
- o Normandie Avenue and Shopping Center Driveway (new railroad crossing/signal)
- o Normandie Avenue and Knox Street/Project Roadway (new railroad crossing/signal)
- o Normandie Avenue and Project Roadway/Francisco Street (existing signal)

Of these, two have existing signals, one will have a relocated existing signal and a fourth is at the intersection of a freeway ramp and a major highway. The final two signals are needed to allow a full four-way driveway across the railroad tracks paralleling Normandie Avenue. Thus, all six signals are considered necessary.

FUTURE TRAFFIC CONDITIONS

There are a number of other projects either under construction or planned for development which will add new traffic volumes to the study area. For this reason, the analysis of future traffic conditions has been expanded to include potential traffic volumes expected to be generated by projects that have not yet been developed but are planned within the study area in the near future.

The transportation network used in the model to project future traffic conditions was based on the City of Los Angeles Framework traffic forecasting model, which was developed using the regional model developed by the Southern California Association of Governments (SCAG) and the Los Angeles Regional Transportation Study (LARTS) section of Caltrans. The SCAG/LARTS model is the primary long-range transportation planning tool for the Los Angeles region. Of particular relevance, this model includes provisions of an expanded High-Occupancy Vehicle (HOV) lane network, such as the recently completed or currently under construction HOV lanes on the Harbor, San Diego, Ventura, Hollywood and Simi Valley Freeways, as well as those programmed for the Antelope Valley Freeway. This model also considers the impacts of the expanding transit network, including extension of the Metro Blue-Line. However, it does not include other improvements considered less assured. Examples include trip reduction measures required by the South Coast Air Quality Management District (SCAQMD) and the Los Angeles County Congestion Management Program (CMP).

While the Framework model provides an overall view of the transportation patterns and characteristics within the Los Angeles area, its emphasis on subregional planning does not provide the level of detail necessary to forecast individual turning movements at specific intersections with acceptable precision. As part of this study, the roadway network contained within the Framework model was refined to better

reflect the capacities and constraints of the transportation system within the study area, specifically the study intersections and freeway interchanges.

Related Projects/Cumulative Growth

The SCAG regional and the City of Los Angeles land use data were augmented by a search for specific development projects within the study area, which are on file with the Cities of Los Angeles, Torrance, Carson and Gardena. These "related projects" included projects which are completed but not fully occupied, are currently under construction or beginning construction, or are presently only proposed but which could become operational within the time frame examined in this study.

It should be noted that the related projects list was developed in consultation with the planning staffs from each relevant jurisdiction. In particular, extensive discussions were held with the City of Torrance Planning Department to make certain that the Allied Signal and other related projects near the project were represented as accurately as possible.

From a review of these lists, it was determined that traffic from thirty-six projects near the study site would produce additional traffic at the study intersections. These related projects are listed and described in Table 7. The locations of these related projects are shown in Figure 5.

To determine the 2006 "null" or non-project traffic conditions, the greater of the trip generation for each zone, based on a comparison of the City of Los Angeles land-use growth projections data, and the sum of the new related projects proposed for each zone, was used as the incremental growth for that zone. The resulting 2006 AM and PM peak hour traffic volume estimates are shown in Figures 6(a) and (b), respectively. These estimates form the basis for determining project traffic impacts

Table 7
Related Projects List

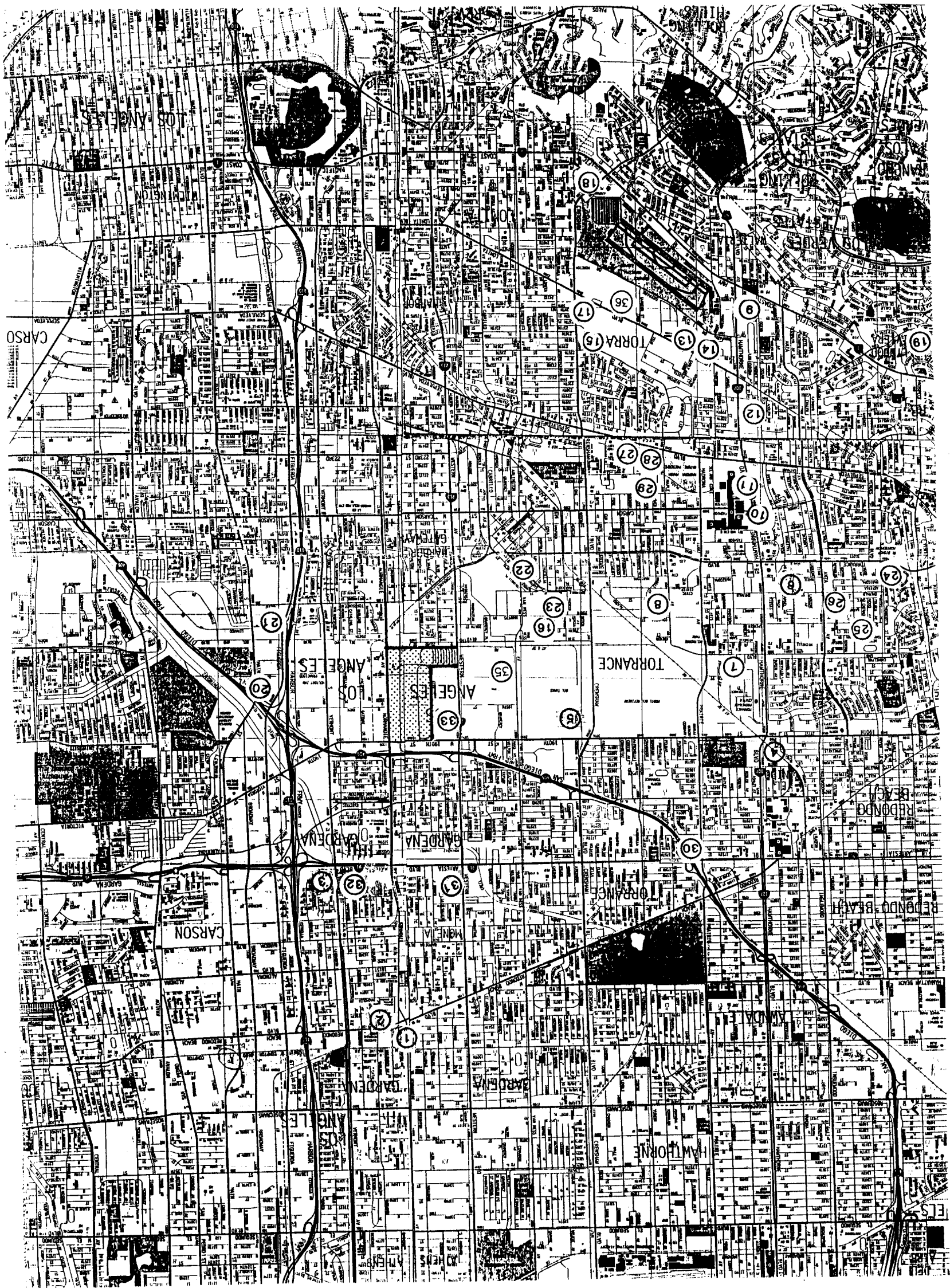
<u>Project No.</u>	<u>Description</u>	<u>Reference No.</u>	<u>Location</u>
1.	25,000 s.f. Church		1251 W. Redondo Beach Blvd.
2.	Expansion from 8,030 s.f. to 37,000 s.f. of Office		1116 W. Redondo Beach Blvd.
3.	54,000 s.f. Supermarket		NEC Western Ave. & Artesia Blvd.
4.	195-Unit Senior Housing and Recreation Bldg.	CUP 94-0001	4502 186th St.
5.	14,000 s.f. Fitness Center	CUP 95-0006	SEC 190th St. & Crenshaw Ave.
6.	135,000 s.f. Hospital Addition	CUP 94-0005	4101 Torrance Blvd.
7.	44,326 Office/Warehouse	CUP 94-0035	3500 Challenger St.
8.	8,000 s.f. Retail	CUP 94-0025	540 Maple Ave.
9.	72-Unit Senior Citizen Condominiums	CUP 93-0005	23860 Los Codona Ave.
10.	46,000 s.f. Office	CUP 90-32	SEC Amie Ave. & Torrance Blvd.
11.	7,219 Restaurant	CUP 95-0016	21880 Hawthorne Blvd.
12.	33,898 Office		NWC Hawthorne Blvd. & 230th St.
13.	24,530 sf Hospital Expansion	CUP 76-90	3330 Lomita Blvd.
14.	60,000 s.f. Medical Office	PP 72-14	3400/3440 Lomita Blvd.
15.	36-Unit Senior Citizen Condominiums	CUP 93-0036	235th St. SS between Elm Ave. & Crenshaw Blvd.
16.	191,196 s.f. Industrial/Warehouse Building		Amapola Ave. between 208th St. & Dominguez St.
17.	167,000 s.f. Storage Facility 6,175 s.f. Retail	CUP 96-0002	WS Crenshaw Blvd. N/O Lomita Blvd.
18.	Remodeling Shopping Center; Demolish 30,475 Retail/ Restaurant; Demolish 29,944 s.f. Health Club; Remove 15 Tennis Courts; Construct 16,700 Retail/ Restaurant; Addition of 14 Screens to an Existing 6-screen Theatre		Rolling Hills Plaza Shopping Center

**Table 7 (cont.)
Related Projects List**

<u>Project No.</u>	<u>Description</u>	<u>Reference No.</u>	<u>Location</u>
19.	28-Unit Single Family Homes	2C 91-2	220 Via Riviera
20.	640,000 s.f. Retail 159,000 Office 127,000 Light Industrial		Carson Towne Center
21.	1,870,000 s.f. Retail		Metro 2000 Outlet Center
22.	18-Unit Single Family Homes	CUP 94-0013	1425 Engracia
23.	20,400 s.f. Office/Warehouse	MOD 95-0006	NEC Madrid & Dominguez Wy.
24.	90-Unit Condominiums	CUP 88-62	5501 Torrance Blvd.
25.	54-Unit Condominiums	CUP 90-2	4921 Spencer St.
26.	11,094 s.f. Church	CUP 95-0026	4625 Garnet St.
27.	131-Unit Condominiums	PD 89-1	2801 Sepulveda Blvd.
28.	52-Unit Condominiums	PD 89-2	2801 Sepulveda Blvd.
29.	84-Unit Condominiums	ZC 90-1	2825 Plaza Del Amo
30.	14,200 s.f. Auto Service Center	CUP 94-0022	SEC Artesia Blvd. & Prairie Ave.
31.	190,000 s.f. Shopping Center		NEC Western Ave. & Artesia Blvd.
32.	3,245 s.f. Mini-Mart/Gas Station		NWC Vermont Blvd. & Artesia Blvd.
33.	755,000 s.f. Shopping Center 3,500 seat Theatre		SEC Western Ave. & 190th St.
34.	44-Unit Townhomes Brisas Del Mar		NWC El Prado & Cravens Ave.
35.	2,512 Million s.f. of Office, Industrial, Research and Development and Related Commercial Services		SWC Western Ave. & 195th St. (Allied Signal Property)
36.	156,000 s.f. Shopping Center		Price-Costco, Lomita Blvd.

RELATED PROJECTS MAP

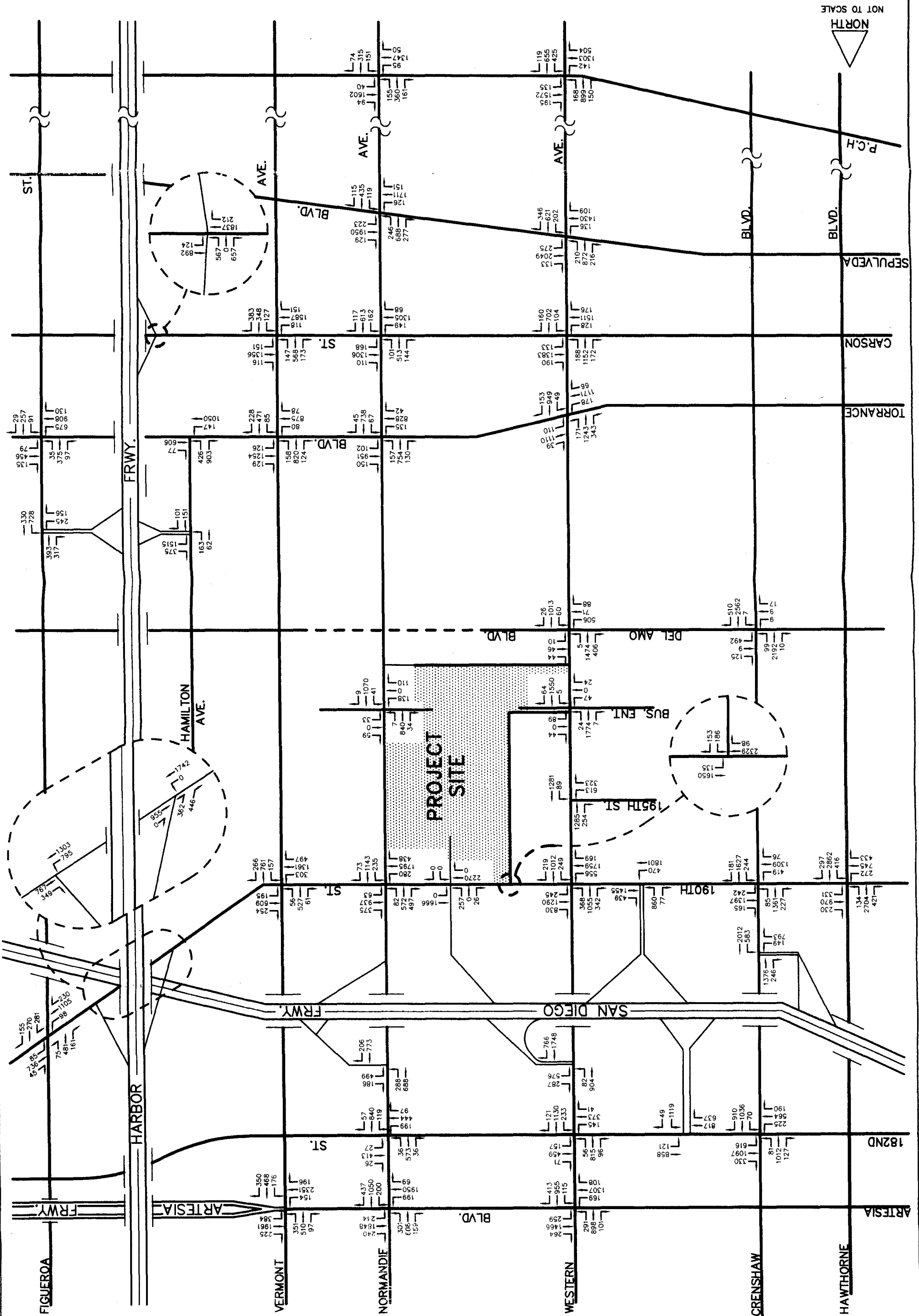
FIGURE 5





10/22/1996

FIGURE 6(b)



on the street system. Future (2006) AM and PM peak hour traffic volumes with the proposed project traffic are shown in Figures 7(a) and (b), respectively.

Analysis of Future Traffic Conditions (With and Without Project)

The analysis of future conditions in the study area was performed using the same Critical Movement Analysis procedures described previously in this report. The results of the Critical Movement Analysis for future traffic conditions at the study intersections are summarized in Table 8. The table shows that at a majority of the study intersections future traffic conditions will likely be at low levels of congestion with and without the proposed project.

As determined by LADOT, a "significant traffic impact" attributable to a project can occur within three ranges of CMA values as follows:

Criteria for Significant Traffic Impact

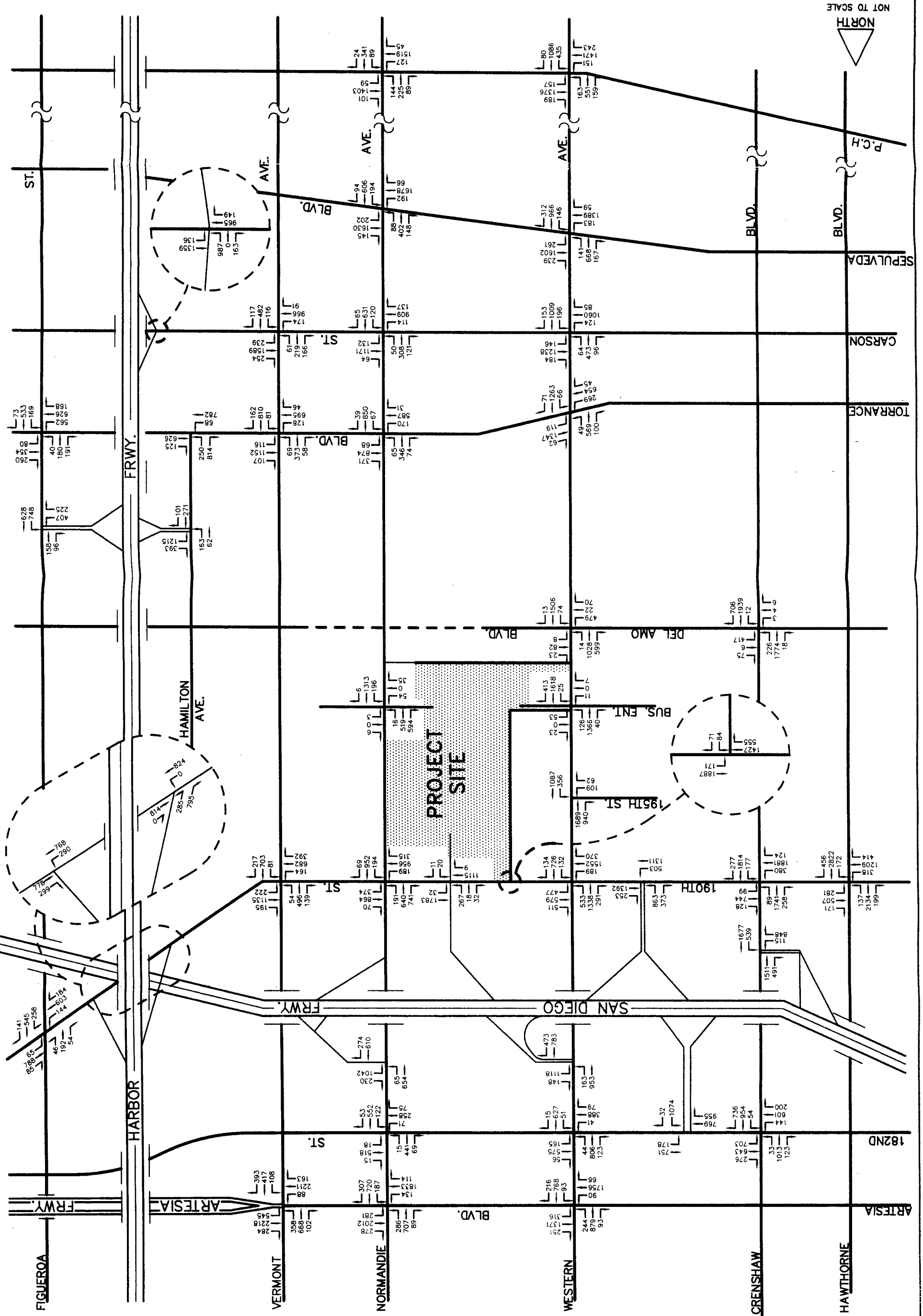
<u>Final CMA Value</u>	<u>Project-Related Increase in CMA Value</u>
0.700 - 8.00	equal to or greater than 0.040
0.800 - 0.900	equal to or greater than 0.020
0.900 or greater	equal to or greater than 0.010

As indicated in Table 8, the proposed project, prior to any mitigation, could have significant traffic impacts at thirty intersections during the morning and/or evening peak hours.



FUTURE (2006) TRAFFIC VOLUMES
WITH PROJECT
AM PEAK HOUR

FIGURE 7(d)



FN: MCDONNEL\AM2006WP

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NOT TO SCALE

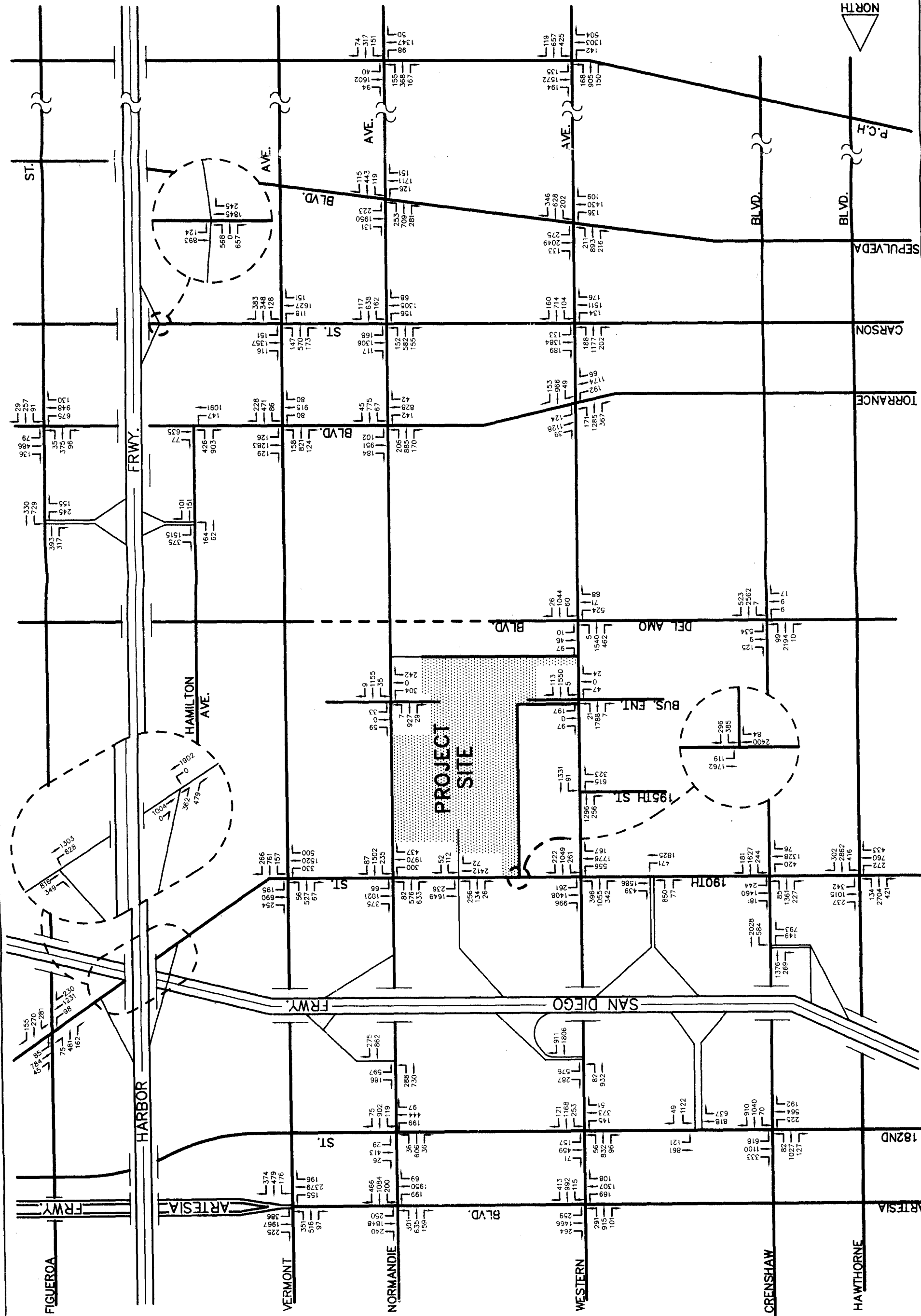


FIGURE 7(b)

FUTURE (2006) TRAFFIC VOLUMES
WITH PROJECT
PM PEAK HOUR

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FM: MCDONNEL\PM2008WP

10/22/1996

Table 8
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
1.	Hawthorne Blvd. and 190th St.	AM PM	1.100 1.120	F F	1.120 1.137	F F	0.020* 0.017*
2.	Crenshaw Blvd. and 182nd St.	AM PM	1.018 1.186	F F	1.018 1.190	F F	0.000 0.004
3.	Crenshaw Blvd. and San Diego Fwy. S/B on/off-ramps	AM PM	1.083 1.017	F F	1.089 1.022	F F	0.006 0.005
4.	Crenshaw Blvd. and 190th St.	AM PM	1.348 1.375	F F	1.369 1.399	F F	0.021* 0.024*
5.	Crenshaw Blvd. and Del Amo Blvd.	AM PM	0.939 1.002	E F	0.959 1.020	E F	0.020* 0.018*
6.	San Diego Fwy. N/B on/off-ramps and 182nd St.	AM PM	0.998 0.955	E E	1.000 0.957	E E	0.002 0.002
7.	Western Ave. and Artesia Blvd.	AM PM	1.120 1.102	F F	1.128 1.115	F F	0.008 0.013*
8.	Western Ave. and 182nd St.	AM PM	0.503 0.663	A B	0.539 0.681	A B	0.036 0.018
9.	Western Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.701 0.855	C D	0.722 0.875	C D	0.021 0.020*
10.	San Diego Fwy. S/B on/off-ramps	AM PM	1.178 1.169	F F	1.275 1.213	F F	0.097* 0.044*
11.	Western Ave. and 190th St.	AM PM	0.877 1.128	D F	0.945 1.265	E F	0.068* 0.137*
12.	Western Ave. and 195th St.	AM PM	0.939 0.820	E D	1.009 0.825	F D	0.070* 0.005
13.	Western Ave. and Project Dwy.	AM PM	0.463 0.516	A A	0.608 0.594	B A	0.145 0.078
14.	Western Ave. and Del Amo Blvd.	AM PM	0.821 0.863	D D	0.954 0.902	E E	0.133* 0.039*
15.	Western Ave. and Torrance Blvd.	AM PM	0.851 0.821	D D	0.936 0.842	E E	0.085* 0.021*
16.	Western Ave. and Carson St.	AM PM	0.817 1.035	D F	0.865 1.043	D F	0.048* 0.008

* Denotes significant impact

Table 8 (cont.)
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
17.	Western Ave. and Sepulveda Blvd.	AM PM	1.050 1.100	F F	1.077 1.107	F F	0.027* 0.007
18.	Western Ave. and Pacific Coast Hwy.	AM PM	0.992 1.017	E F	1.002 1.020	F F	0.010* 0.003
19.	Project Dwy. and 190th St.	AM PM	0.692 1.023	B F	0.831 1.164	D F	0.139* 0.141*
20.	Artesia Blvd. and Normandie Ave.	AM PM	0.937 1.065	E F	0.940 1.081	E F	0.003 0.016*
21.	Normandie Ave. and 182nd St.	AM PM	0.463 0.602	A B	0.476 0.629	A B	0.013 0.027
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.694 0.747	B C	0.762 0.832	C D	0.068* 0.085*
23.	San Diego Fwy. off-ramp and 190th St.	AM PM	0.820 1.064	D F	0.778 1.007	C F	- 0.042 - 0.057
24.	Normandie Ave. and 190th St.	AM PM	0.969 1.246	E F	1.141 1.431	F F	0.172* 0.185*
25.	Normandie Ave. and Project Dwy./ Francisco St.	AM PM	0.493 0.552	A A	0.560 0.779	A C	0.067 0.227*
26.	Normandie Ave. and Torrance Blvd.	AM PM	0.811 0.823	D D	0.867 0.884	D D	0.056* 0.061*
27.	Normandie Ave. and Carson St.	AM PM	0.716 0.896	C D	0.732 0.923	C E	0.016 0.027*
28.	Normandie Ave. and Sepulveda Blvd.	AM PM	0.782 0.888	C D	0.788 0.896	C D	0.006 0.008
29.	Normandie Ave. and Pacific Coast Hwy.	AM PM	0.564 0.644	A B	0.566 0.651	A B	0.002 0.007
30.	Vermont Ave. and Artesia Blvd.	AM PM	0.969 0.930	E E	0.979 0.937	E E	0.010* 0.007
31.	Vermont Ave. and 190th St.	AM PM	0.886 1.189	D F	0.942 1.246	E F	0.056* 0.057*
32.	Vermont Ave. and Torrance Blvd.	AM PM	0.841 0.886	D D	0.875 0.896	D D	0.034* 0.010

* Denotes significant impact

Table 8 (cont.)
Critical Movement Analysis Summary
Future Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
33.	Vermont Ave. and Carson St.	AM	0.847	D	0.847	D	0.000
		PM	0.933	E	0.946	E	0.013*
34.	Harbor Fwy. S/B off-ramp and 190th St.	AM	0.703	C	0.803	D	0.100*
		PM	0.822	D	0.875	D	0.053*
35.	Harbor Fwy. N/B on-ramp and 190th St.	AM	0.487	A	0.566	A	0.079
		PM	0.983	E	1.030	F	0.047*
36.	Figueroa St. and 190th St.	AM	0.551	A	0.613	B	0.062
		PM	0.826	D	0.869	D	0.043*
37.	Hamilton Ave. and Harbor Fwy. S/B on/off-ramps	AM	0.735	C	0.735	C	0.000
		PM	0.765	C	0.765	C	0.000
38.	Figueroa St. and Harbor Fwy. N/B on/off-ramps	AM	0.779	C	0.794	C	0.015
		PM	0.855	D	0.856	D	0.001
39.	Hamilton Ave. and Torrance Blvd.	AM	0.917	E	0.983	E	0.066*
		PM	1.055	F	1.074	F	0.019*
40.	Figueroa St. and Torrance Blvd.	AM	0.851	D	0.866	D	0.015
		PM	1.013	F	1.041	F	0.028*
41.	Harbor Fwy. S/B on/off-ramps and Carson St.	AM	1.168	F	1.170	F	0.002
		PM	0.964	E	0.975	E	0.011*

* Denotes significant impact

The Level of Service values used for freeway segment analyses are estimated by calculating the demand-to-capacity (D/C) ratio and using the LOS definitions shown in Table 9. The peak hour volumes shown in Table 10 were compared to freeway capacities, based on 2,000 vehicles per hour per lane (VPHPL) and 1,500 VPHPL for HOV lanes, in order to determine the demand-to-capacity ratio (D/C) and corresponding Level of Service. The results of this comparison are shown in Table 11.

Table 9
Freeway Mainline Level of Service Definitions

<u>D/C Ratio</u>	<u>LOS</u>	<u>D/C Ratio</u>	<u>LOS*</u>
0.00 - 0.35	A	> 1.00 - 1.25	F(0)
> 0.35 - 0.54	B	> 1.25 - 1.35	F(1)
> 0.54 - 0.77	C	> 1.35 - 1.45	F(2)
> 0.77 - 0.93	D	> 1.45	F(3)
> 0.93 - 1.00	E		

* LOS F(1) through F(3) represent severe congestion (travel speeds less than 25 MPH) for more than one hour.

Source: Los Angeles County Metropolitan transportation Authority, Congestion Management Program, 1993.

As Table 11 shows, the area freeway system will be heavily congested with or without the project. The project will add incrementally to these insignificant cumulative impacts. The project will have significant impacts at up to four locations during the morning peak hour and in the opposite direction at the same four locations in the PM peak hour. These will be addressed by the overall Congestion Management Program (CMP) improvements, such as those included in the mitigation section of this report.

Table 10
Existing and Future
Peak Hour Freeway Traffic Volumes

CMP Station	Direction	Peak Hour	Existing Volume	Future	
				Without Project Volume	With Project Volume
I-405 Freeway:					
Santa Fe Ave. (1064)	N/B	AM	7,386	7,571	7,810
		PM	6,003	6,397	6,475
	S/B	AM	7,866	8,063	8,092
		PM	10,475	10,737	10,888
North of Carson St. (1065)	N/B	AM	8,093	8,295	8,556
		PM	7,792	8,362	8,461
	S/B	AM	7,055	7,564	7,616
		PM	11,174	11,453	11,687
Marine Ave. (1066)	N/B	AM	9,024	9,331	9,371
		PM	10,352	11,033	11,233
	S/B	AM	7,638	7,829	8,044
		PM	11,995	12,295	12,365
I-110 Freeway:					
South of "C" St. (1044)	N/B	AM	4,293	4,576	4,627
		PM	2,710	2,998	3,017
	S/B	AM	2,786	3,097	3,108
		PM	4,258	4,723	4,776
South of Manchester Blvd. (1045)	N/B	AM	11,995	13,076	13,065
		PM	8,262	9,322	9,408
	S/B	AM	7,820	9,926	10,026
		PM	7,886	10,232	10,270
SR-91 Freeway:					
East of Alameda St. (1035)	E/B	AM	8,824	10,301	10,339
		PM	16,761	18,346	18,546
	W/B	AM	15,528	16,924	17,176
		PM	8,839	10,151	10,221
East of Cherry Ave. (1036)	E/B	AM	8,899	9,121	9,139
		PM	14,070	14,422	14,518
	W/B	AM	12,940	13,263	13,390
		PM	9,114	9,342	9,370

Table 11
Project Freeway Impacts
Existing and Future Levels of Service

CMP Station	Direction	Peak Hour	Future						
			Existing		Without Project		With Project		
			V/C	LOS	V/C	LOS	V/C	LOS	Impact
I-405 Freeway:									
Santa Fe Ave. (1064)	N/B	AM	0.923	D	0.946	E	0.976	E	0.030
		PM	0.750	C	0.800	D	0.809	D	0.009
	S/B	AM	0.983	E	1.008	F(0)	1.011	F(0)	0.003
		PM	1.309	F(1)	1.342	F(1)	1.361	F(2)	0.019
North of Carson St. (1065)	N/B	AM	1.012	F(0)	1.037	F(0)	1.070	F(0)	0.033*
		PM	0.974	E	1.045	F(0)	1.058	F(0)	0.013
	S/B	AM	0.882	D	0.946	E	0.952	E	0.006
		PM	1.397	F(2)	1.432	F(2)	1.461	F(3)	0.029*
Marine Ave. (1066)	N/B	AM	1.128	F(0)	1.166	F(0)	1.171	F(0)	0.005
		PM	1.294	F(1)	1.379	F(2)	1.404	F(2)	0.025*
	S/B	AM	0.955	E	0.979	E	1.005	F(0)	0.026*
		PM	1.499	F(3)	1.537	F(3)	1.546	F(3)	0.009
I-110 Freeway:									
South of "C" St. (1044)	N/B	AM	0.537	B	0.572	C	0.578	C	0.006
		PM	0.339	A	0.375	B	0.377	B	0.002
	S/B	AM	0.348	A	0.387	B	0.388	B	0.001
		PM	0.532	B	0.590	C	0.597	C	0.007
South of Manchester Blvd. (1045)	N/B	AM	1.499	F(3)	1.631	F(3)	1.633	F(3)	0.002
		PM	1.033	F(0)	1.165	F(0)	1.176	F(0)	0.011
	S/B	AM	0.978	E	1.241	F(0)	1.253	F(1)	0.012
		PM	0.986	E	1.279	F(1)	1.284	F(1)	0.005
SR-91 Freeway:									
East of Alameda St. (1035)	E/B	AM	0.735	C	0.858	D	0.862	D	0.004
		PM	1.397	F(2)	1.529	F(3)	1.546	F(3)	0.017
	W/B	AM	1.294	F(1)	1.410	F(2)	1.431	F(2)	0.021*
		PM	0.737	C	0.846	D	0.852	D	0.006
East of Cherry Ave. (1036)	E/B	AM	0.890	D	0.912	D	0.914	D	0.002
		PM	1.407	F(2)	1.442	F(2)	1.452	F(3)	0.010
	W/B	AM	1.294	F(1)	1.326	F(1)	1.339	F(1)	0.013
		PM	0.911	D	0.934	E	0.937	E	0.003

* Denotes significant project impact.

It should be noted that congestion on the mainline will as affect conditions on the area on-ramps. Unmetered ramps form inefficient merge or weave sections when the mainline speeds drop below the point where the on-ramp traffic can easily find gaps. Ramp metering, by spreading out the "pulses" from adjacent signals, can improve the capacity of the ramp to a limited degree. However, if the mainline of the freeway is operating under forced flow conditions, back-ups from the mainline will extend on to ramps. While these adverse impacts occur on the ramp, they are a result of mainline congestion and, thus, no separate ramp capacity analysis would be meaningful.

MITIGATION MEASURES

As required by the Department of Transportation (LADOT), the project must submit a Traffic Mitigation Plan (TMP) to reduce the project's significant traffic impacts to non-significant levels. In selecting the project's traffic mitigating measures, the City's top priority is reducing trip demand by single occupancy vehicles and promoting transit use. To achieve this trip reduction goal, the City has prioritized mitigation measures by category as listed below:

1. Transportation Demand Management (TDM) Programs;
2. Transit Capacity and Access Improvements;
3. Traffic Signal Operation Improvements (ATSAC);
4. Street Widening and Other Physical Improvements; and
5. Street Restriping and Parking Prohibitions.

The project's proposed TMP includes mitigation measures in several of the categories listed above. The recommended mitigation measures are:

Category 1 - TDM Programs

- o Compliance with Ordinance No. 168,700 (Transportation Demand Management and Trip Reduction Measures). This ordinance focuses on incorporating TDM facilities into the design of new buildings to promote alternative modes of transportation (see Appendix B). It should be followed in the design and construction of the project site and buildings.
- o Compliance with SCAQMD Rule 2202. The South Coast Air Quality Management District (SCAQMD) has adopted a rule designed to reduce the air pollution impacts of commute trips. This rule, unlike the rule it replaces, does not mandate trip reduction programs but allows individual employers to select from a variety of options. However, most employers have

continued to select ridesharing programs as the most cost-effective method of reducing air quality impacts. If site employers implement these trip reduction measures, 15 percent or more of the peak hour traffic generation from the industrial/office park component of the project could be eliminated.

Category 2 - Transit Improvements

- o Bus Transit Improvements. This project should work with the appropriate transit districts (i.e., Gardena Transit, Torrance Transit and MTA) to improve transit service to the site. Further, the sidewalks through the sites should be designed to provide attractive pedestrian routes to and from transit stops.

Categories 3, 4 and 5 - Signal System Improvements, Street Widenings and Restriping, and Parking Restrictions

- o 1. Hawthorne Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes. Modify the signal to remove the existing eastbound right-turn phase.
- o 4. Crenshaw Boulevard and 190th Street -- Remove median islands, restripe and restrict parking along 190th Street to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 5. Crenshaw Boulevard and Del Amo Boulevard -- Restripe Del Amo Boulevard and modify the traffic signal to provide two left-turn-only lanes, a through/left optional lane and a right-turn-only lane in the westbound direction.

- o 7. Western Avenue and Artesia Boulevard -- Restripe Western Avenue and restrict parking to convert the existing northbound and southbound right-turn-only lanes to through/right optional lanes.
- o 9. Western Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and/or modify the median island and restripe the westbound approach to the intersection (i.e., the off-ramp) to provide two left-turn-only lanes and a right-turn-only lane instead of the existing two-lane configuration.
- o 10. I-405 Freeway Southbound On/Off-Ramps and 190th Street -- Flare the west leg of the intersection, restripe 190th Street, restrict parking and modify the signal to provide dual left-turn lanes in the eastbound direction.
- o 11. Western Avenue and 190th Street -- Any mitigation would require a reduction below 11 foot interior lane widths on a high speed state facility and/or aquisition of right-of-way. Therefore, no feasible mitigation is available.
- o 12. Western Avenue and 195th Street -- Fund the installation of the Automated Traffic Surveillance and Control (ATSAC) system at this location.
- o 14. Western Avenue and Del Amo Boulevard -- Restripe the eastbound approach to convert the through lane to through/left optional lane and provide east-west opposed phasing. Remove the crosswalk on the north leg. Also fund the installation of ATSAC at this location.
- o 15. Western Avenue and Torrance Boulevard -- Any mitigation would require removal of parking, narrowing of the median containing the railroad tracks or aquisition of additional right-of-way, none of which is considered feasible. Therefore, no mitigation is available.

- o 16. Western Avenue and Carson Street -- Mitigation of this impact would require removal of parking on Carson Street, for which there is a heavy demand. Therefore, no mitigation is available.
- o 17. Western Avenue and Sepulveda Boulevard -- Restrict parking to provide right-turn-only lanes in the northbound and southbound directions.
- o 18. Western Avenue and Pacific Coast Highway -- Installation of mitigation would require interior lane width of less than 11 feet on a high speed state facility or an offsetting of lanes across the intersection. Therefore, no mitigation is available.
- o 19. Project Roadway and 190th Street -- Restrict parking and restripe 190th Street to provide three travel lanes plus left-turn channelization in the westbound and eastbound directions and three travel lanes in the eastbound direction. Construct the internal project roadway to provide a three-lane northbound approach including two left-turn-only lanes and a right-turn-only lane. Fund the installation of ATSAC at this intersection.
- o 20. Normandie Avenue and Artesia Boulevard -- Provide dual left-turn lanes in the southbound direction by restriping Normandie Avenue and modifying the signal.
- o 22. Normandie Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and restripe the northbound approach to provide two through lanes and an exclusive right-turn-only lane to facilitate freeway access. Fund ATSAC installation at this location.
- o 23. I-405 Freeway Southbound Off-Ramp/Project Driveway and 190th Street -- Flare and restripe 190th Street to provide three travel lanes and dual left-turn lanes in the westbound direction and three travel lanes and a "pre-left-

turn-lane” for Normandie Avenue in the eastbound direction. Construct the project driveway to provide dual left-turn lanes and a right-turn-only lane in the northbound direction. Install a signal with opposed northbound and southbound phasing. Fund ATSAC installation at this location.

Should an LADOT review of operations at this intersection indicate that left-turns to or from the driveway would unacceptably interfere with the ability to coordinate this signal and the signal at 190th Street and Normandie Avenue, one or more turning movements could be restricted.

- o 24. Normandie Avenue and 190th Street -- Modify the signal and railroad crossing equipment on 190th Street to provide dual left-turn-only lanes plus three travel lanes in the eastbound and westbound directions. Modify the signal equipment to provide a southbound right-turn overlap phase. Additionally, fund the installation of ATSAC at this location.
- o 25. Normandie Avenue and Project Roadway/Francisco Street -- Construct the project roadway to provide a three-lane eastbound approach including a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Modify the signal to provide opposed phasing the eastbound and westbound directions.
- o 26. Normandie Avenue and Torrance Boulevard -- Fund the installation of ATSAC at this intersection.
- o 27. Normandie Avenue and Carson Street -- Fund the installation of ATSAC at this intersection.
- o 30. Vermont Avenue and Artesia Boulevard -- Flare and restripe Vermont Avenue and modify the signal equipment to provide dual left-turn lanes,

two through lanes and a right-turn-only lane in the northbound direction. Provide a northbound right-turn phase overlapping the existing westbound left-turn phase as part of the signal modifications.

- o 31. Vermont Avenue and 190th Street -- Restripe 190th Street to provide three through lanes in the eastbound and westbound directions. Fund the installation of ATSAC at this intersection.
- o 32. Vermont Avenue and Torrance Boulevard -- Restrict parking and restripe Vermont Avenue to provide a right-turn-only lane in the northbound and southbound directions.
- o 33. Vermont Avenue and Carson Street -- Restrict parking and restripe Vermont Avenue to convert the existing eastbound right-turn-only lane into a through/right optional lane.
- o 34. I-110 Freeway Southbound Off-Ramp and 190th Street -- Restripe 190th Street to provide three travel lanes in the westbound direction. Modify the signal to provide a southbound right-turn phase extension concurrent with the initiation of the eastbound through phase. Fund the installation of ATSAC at this intersection.
- o 35. I-110 Freeway Northbound On-Ramp and 190th Street -- Install a traffic signal at this location. Modify the median island, restrict parking and restripe 190th Street to provide dual eastbound left-turn lanes including an HOV lane.
- o 36. Figueroa Street and 190th Street -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.

- o 39. Hamilton Avenue and Torrance Boulevard -- Restripe Hamilton Avenue to provide a left/right optional lane and a right-turn-only lane.
- o 40. Figueroa Street and Torrance Boulevard -- Remove the sidewalk along the south curb, restrict parking and restripe Torrance Boulevard to provide a left-turn-only lane, a through/left optional lane, and through/right optional lane in the eastbound direction. Modify the signal to provide opposed east-west phasing.
- o 41. Harbor Freeway Southbound On-Off Ramps and Carson Street -- Restripe Carson Street to provide a right-turn-only lane in the eastbound direction.

Table 12 summarizes the CMA values at the significantly impacted intersections with the physical (Categories 3, 4 and 5) mitigating measures listed above. It does not, however, consider the trip reduction benefits of the Category 1 and 2 measures.

As this table shows, while the Harbor Gateway Center multi-use development will add to the cumulative traffic flow in the study area, it will be able to reduce significant impacts upon traffic conditions at most locations once the proposed traffic mitigating measures are installed. Significant traffic impacts could remain, however, at four intersections and on area freeways. Cumulative programs, such as regional transit system improvements, ridesharing requirements, and regional roadway capacity enhancements will mitigate these remaining impacts to some degree.

It should be noted that many of these improvements are outside the control of the City of Los Angeles and the project proponent. Should any of these measures be rejected by another jurisdiction with control over the intersection, and should an appropriate alternative mitigation measure not be identified, then additional significant traffic impacts could remain.

Table 12
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions
With Project Mitigation

No.	Intersection	Peak Period	Without Project		With Project With Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
1.	Hawthorne Blvd. and 190th St.	AM PM	1.100 1.120	F F	1.074 1.071	F F	- 0.026 - 0.049
4.	Crenshaw Blvd. and 190th St.	AM PM	1.348 1.375	F F	1.171 1.265	F F	- 0.177 - 0.110
5.	Crenshaw Blvd. and Del Amo Blvd.	AM PM	0.939 1.002	E F	0.921 0.971	E E	- 0.018 - 0.031
7.	Western Ave. and Artesia Blvd.	AM PM	1.120 1.102	F F	1.087 1.095	F F	- 0.033 - 0.007
9.	Western Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.701 0.855	C D	0.710 0.798	C C	+ 0.009 - 0.057
10.	San Diego Fwy. S/B on/off-ramps	AM PM	1.178 1.169	F F	1.116 1.064	F F	- 0.062 - 0.105
11.	Western Ave. and 190th St.	AM PM	0.877 1.128	D F	0.945 1.265	E F	+ 0.068* + 0.137*
12.	Western Ave. and 195th St.	AM PM	0.939 0.820	E D	0.939 0.755	E C	+ 0.000 - 0.065
14.	Western Ave. and Del Amo Blvd.	AM PM	0.821 0.863	D D	0.774 0.721	C C	- 0.047 - 0.142
15.	Western Ave. and Torrance Blvd.	AM PM	0.851 0.821	D D	0.936 0.842	E D	+ 0.085* + 0.021*
16.	Western Ave. and Carson St.	AM PM	0.817 1.035	D F	0.865 1.043	D F	+ 0.048* + 0.008
17.	Western Ave. and Sepulveda Blvd.	AM PM	1.050 1.100	F F	0.963 1.029	E F	- 0.087 - 0.071
18.	Western Ave. and Pacific Coast Hwy.	AM PM	0.992 1.017	E F	1.002 1.020	F F	+ 0.010* + 0.003
19.	Project Dwy. and 190th St.	AM PM	0.692 1.023	B F	0.543 0.760	A C	- 0.149 - 0.263
20.	Artesia Blvd. and Normandie Ave.	AM PM	0.937 1.065	E F	0.895 0.983	D E	- 0.042 - 0.082
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.694 0.747	B C	0.601 0.671	B B	- 0.093 - 0.076

* Denotes significant impact

Table 12 (cont.)
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions
With Project Mitigation

No.	<u>Intersection</u>	<u>Peak Period</u>	<u>Without Project</u>		<u>With Project With Mitigation</u>		
			<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>	<u>IMPACT</u>
23.	San Diego Fwy. off-ramp and 190th St.	AM PM	0.820 1.064	D F	0.485 0.673	A B	- 0.335 - 0.391
24.	Normandie Ave. and 190th St.	AM PM	0.969 1.246	E F	0.955 1.133	E F	- 0.014 - 0.113
25.	Normandie Ave. and Project Dwy./ Francisco St.	AM PM	0.493 0.552	A A	0.570 0.608	A B	+ 0.077 + 0.056
26.	Normandie Ave. and Torrance Blvd.	AM PM	0.811 0.823	D D	0.797 0.814	C D	- 0.014 - 0.009
27.	Normandie Ave. and Carson St.	AM PM	0.716 0.896	C D	0.662 0.853	B D	- 0.054 - 0.043
30.	Vermont Ave. and Artesia Blvd.	AM PM	0.969 0.930	E E	0.943 0.902	E E	- 0.026 - 0.028
31.	Vermont Ave. and 190th St.	AM PM	0.886 1.189	D F	0.717 0.939	C E	- 0.169 - 0.250
32.	Vermont Ave. and Torrance Blvd.	AM PM	0.841 0.886	D D	0.821 0.855	D D	- 0.020 - 0.031
33.	Vermont Ave. and Carson St.	AM PM	0.847 0.933	D E	0.847 0.816	D D	+ 0.000 - 0.117
34.	Harbor Fwy. S/B off-ramp and 190th St.	AM PM	0.703 0.822	C D	0.641 0.805	B D	- 0.062 - 0.017
35.	Harbor Fwy. N/B on-ramp and 190th St.	AM PM	0.487 0.983	A D	0.366 0.575	A A	- 0.121 - 0.408
36.	Figuerroa St. and 190th St.	AM PM	0.551 0.826	A D	0.595 0.815	A D	+ 0.044 - 0.011
39.	Hamilton Ave. and Torrance Blvd.	AM PM	0.917 1.055	E F	0.806 0.940	D E	- 0.111 - 0.115
40.	Figuerroa St. and Torrance Blvd.	AM PM	0.851 1.013	D F	0.785 0.858	C D	- 0.066 - 0.155
41.	I-110 S/B On/Off Ramps and Carson St.	AM PM	1.168 0.964	F E	1.170 0.878	F D	+ 0.002 - 0.086

* Denotes significant impact

APPENDIX A

TRAFFIC IMPACTS OF PHASE I PROJECT

APPENDIX A

Traffic Generation of Phase 1 Project

<u>Land Use Category</u>	<u>Size (Sq. Ft.)</u>	<u>Daily Traffic</u>	Phase I					
			<u>AM Peak Hour</u>			<u>PM Peak Hour</u>		
			<u>In</u>	<u>Out</u>	<u>Total</u>	<u>In</u>	<u>Out</u>	<u>Total</u>
Shopping Center Gross Generation								
Retail*	385,000	15,010	212	125	337	712	711	1,423
Theater, 4,000 seats	65,000	1,930	76	44	120	154	86	240
Subtotal	450,000	16,940	288	169	457	866	797	1,663
Less Shopping Center Internal/Pass-By Trips								
Retail (1%/20%)		(3,000)	(42)	(25)	(67)	(142)	(142)	(284)
Theater (10%/10%)		(390)	(15)	(9)	(24)	(31)	(17)	(48)
Subtotal		(3,390)	(57)	(34)	(91)	(173)	(159)	(332)
Site Generation	450,000	13,550	231	135	366	693	638	1,331
Less Existing Site Generation Warehouse**	(600,000)	(2,120)	(151)	(59)	(210)	(96)	(178)	(274)
Net Site Generation Increase	<u>(150,000)</u>	<u>11,430</u>	<u>80</u>	<u>76</u>	<u>156</u>	<u>597</u>	<u>460</u>	<u>1,057</u>

* Rate for 450,000 sq. ft. Shopping Center used.

** Rate for 2.4 million sq. ft. Warehouse used. Building area removal based on acreage of phase.

FUTURE (1998) TRAFFIC VOLUMES
WITHOUT PROJECT
AM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering



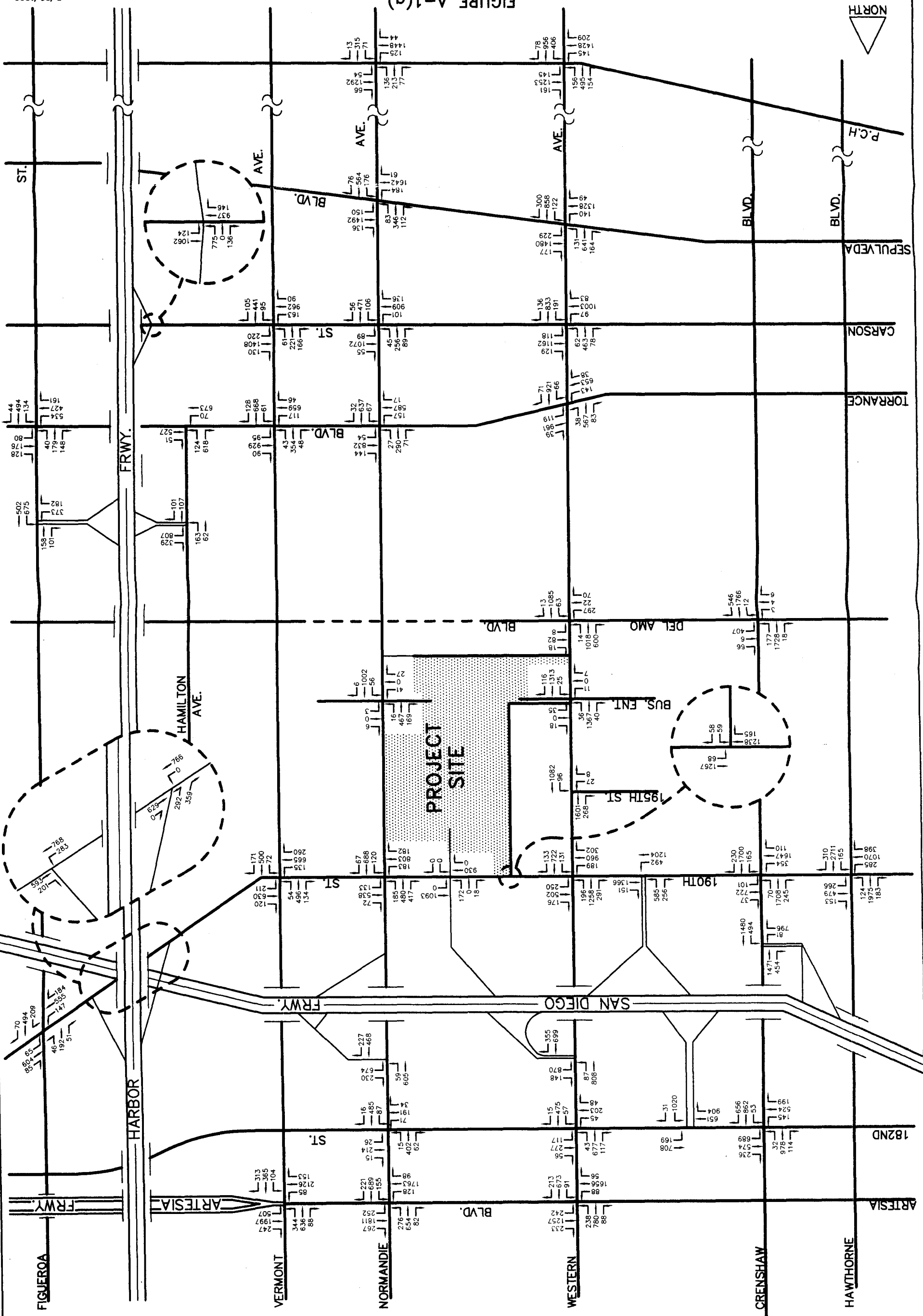
FN: MCDONNELL\AM1998WO

8/28/1996

FIGURE A-1(a)



NOT TO SCALE



FUTURE (1998) TRAFFIC VOLUMES
WITHOUT PROJECT
PM PEAK HOUR

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Los Angeles, California 90025
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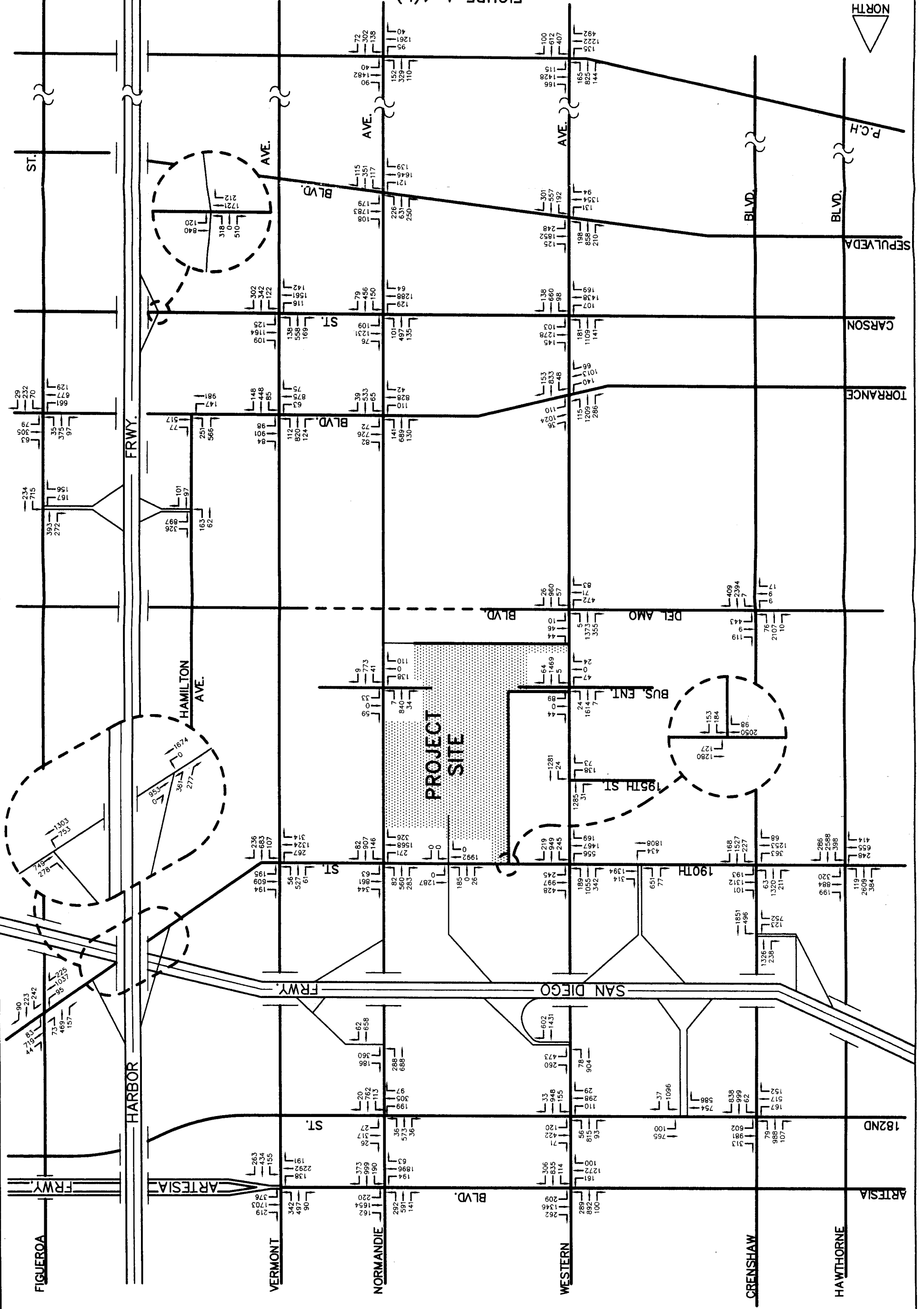


FN: MCDONNEL\PM1998WO

8/29/1996

FIGURE A-1(b)

NOT TO SCALE



FUTURE (1998) TRAFFIC VOLUMES
WITH PROJECT
AM PEAK HOUR

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Los Angeles, California 90025
(310) 473-6508
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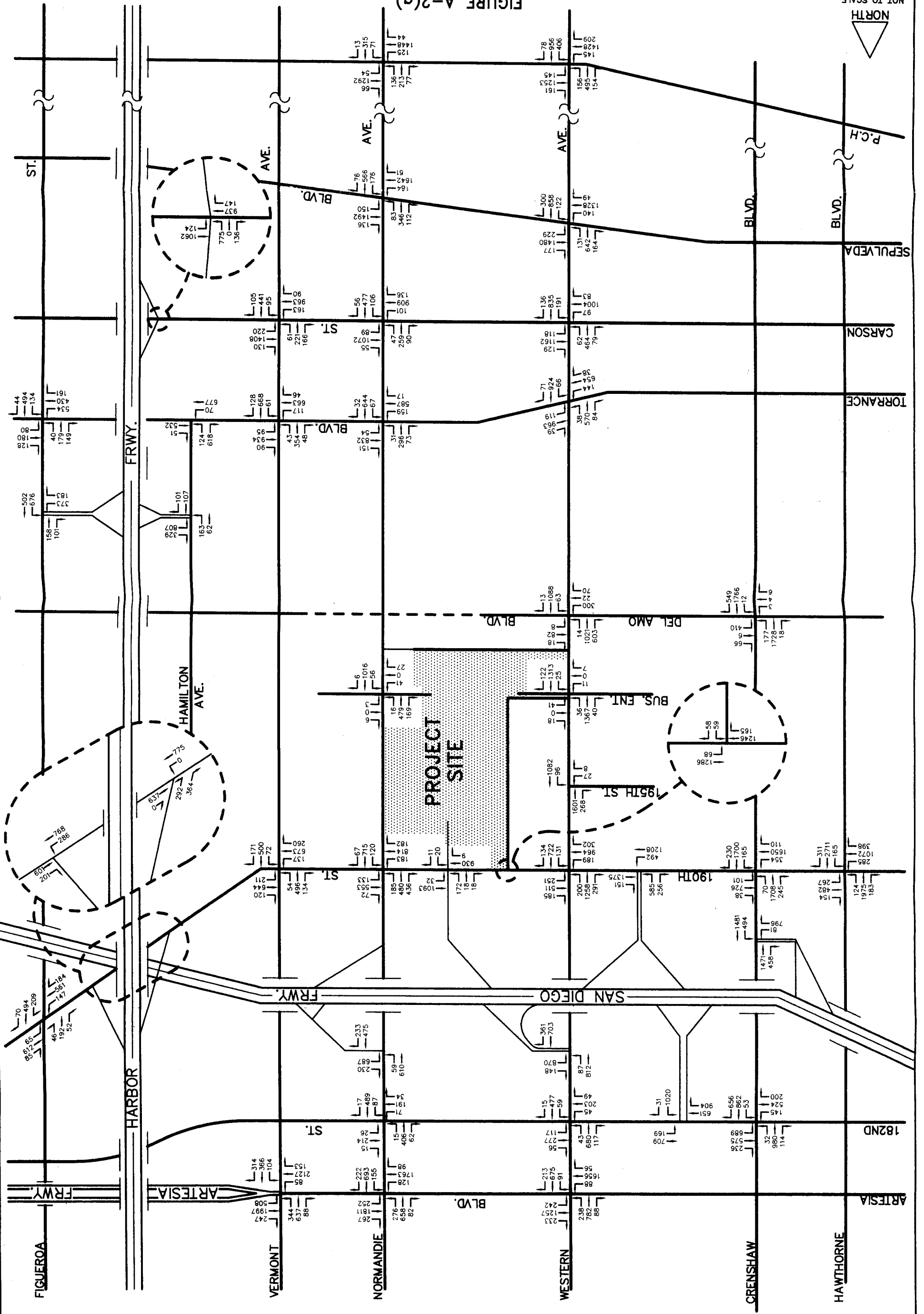


FN: MCDONNEL\AM1998WP

8/29/1996

FIGURE A-2(d)

NOT TO SCALE



FUTURE (1998) TRAFFIC VOLUMES
WITH PROJECT
PM PEAK HOUR

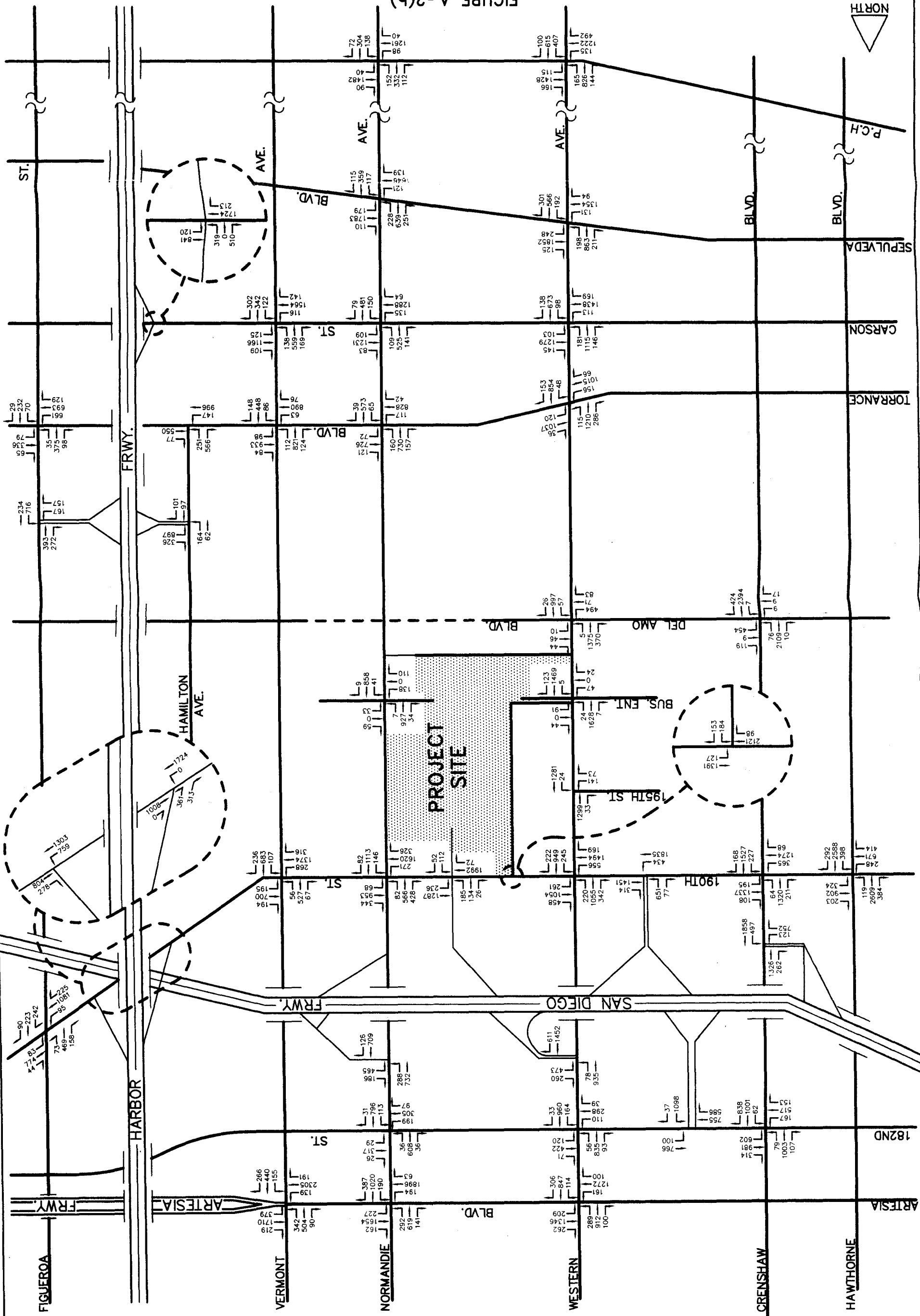
CRAIN & ASSOCIATES
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Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering



FN: MCDONNEL\PM1998WP

8/28/1996

FIGURE A-2(b)



FUTURE (1998) TRAFFIC VOLUMES
PHASE 1 PROJECT
AM PEAK HOUR

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Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering



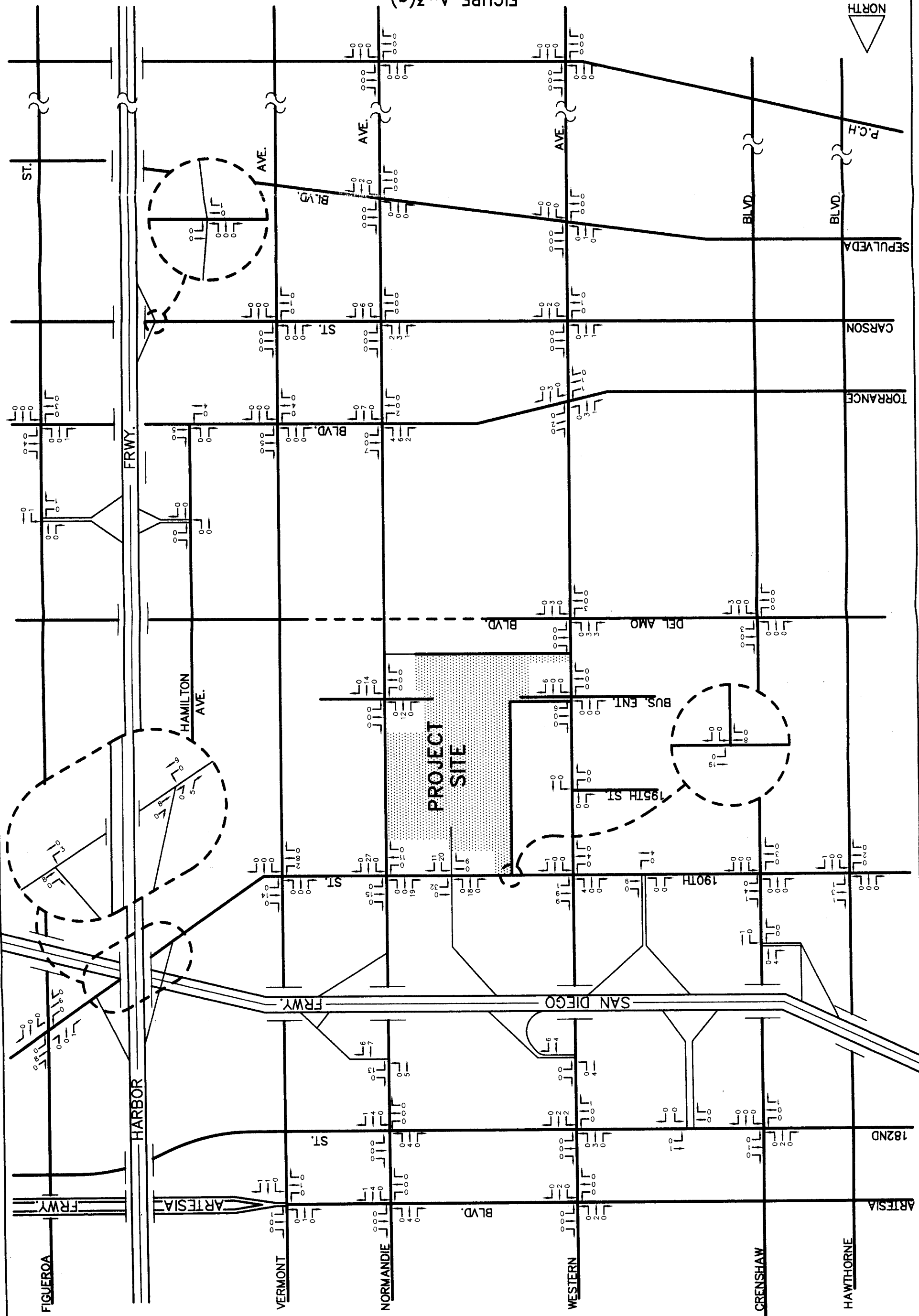
FN: MCDONNELL\AMP\PROVOL

8/29/1998

FIGURE A-3(a)



NOT TO SCALE



FUTURE (1998) TRAFFIC VOLUMES
PHASE 1 PROJECT
PM PEAK HOUR

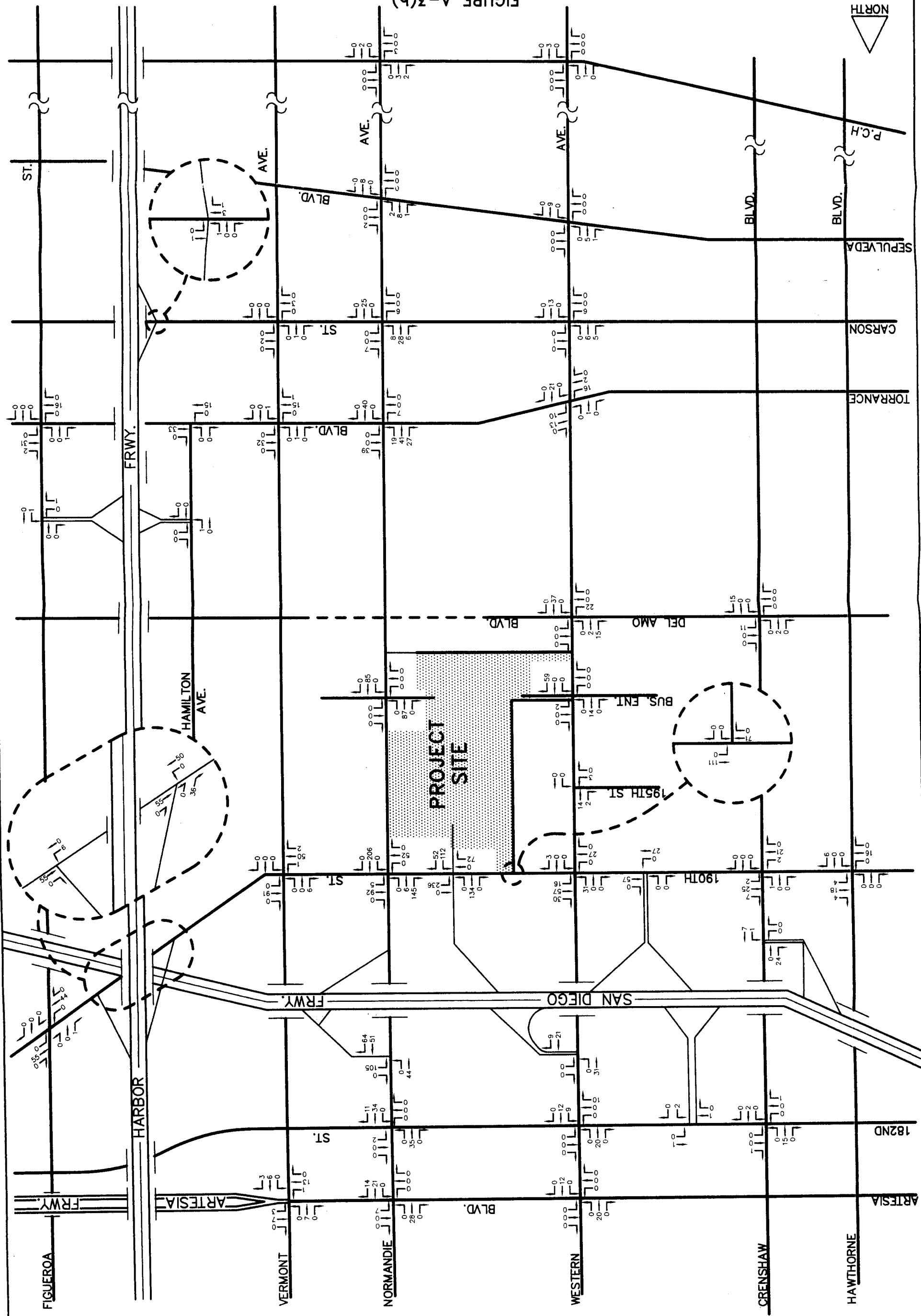
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering

FN: MCDONNELL\PM\PROVOL

8/28/1996

FIGURE A-3(b)

NOT TO SCALE



Year 1998 Project Traffic Conditions
A.M. Peak Hour

No Intersection	-- Future (1998) Conditions --				
	W/O Project		With Phase 1 Proj.		
	CMA	LOS	CMA	LOS	Impact
1 Hawthorne Bl. and 190th St.	1.054	F	1.060	F	0.006
2 Crenshaw Bl. and 182nd St.	1.095	F	1.096	F	0.001
3 Crenshaw Bl. and I-405 SB On/Off Ramps	0.934	E	0.940	E	0.006
4 Crenshaw Bl. and 190th St.	1.277	F	1.287	F	0.010
5 Crenshaw Bl. and Del Amo Bl.	0.903	E	0.910	E	0.007
6 I-405 NB On/Off Ramps and 182nd St.	0.891	D	0.892	D	0.001
7 Western Ave. and Artesia Bl.	1.021	F	1.025	F	0.004
8 Western Ave. and 182nd St.	0.643	B	0.656	B	0.013
9 Western Ave. and I-405 NB On/Off Ramps	0.773	C	0.780	C	0.007
10 I-405 SB On/Off Ramps and 190th St.	1.049	F	1.069	F	0.020
11 Western Ave. and 190th St.	1.005	F	1.026	F	0.021
12 Western Ave. and 195th St.	0.402	A	0.407	A	0.005
13 Western Ave. and Project Driveway	0.478	A	0.486	A	0.008
14 Western Ave. and Del Amo Bl.	0.805	D	0.823	D	0.018
15 Western Ave. and Torrance Bl.	0.764	C	0.787	C	0.023
16 Western Ave. and Carson St.	1.039	F	1.042	F	0.003
17 Western Ave. and Sepulveda Bl.	1.103	F	1.105	F	0.002
18 Western Ave. and Pacific Coast Highway	1.014	F	1.015	F	0.001
19 Project Driveway and 190th St.	0.965	E	0.947	E	-0.018
20 Artesia Bl. and Normandie Ave.	1.020	F	1.031	F	0.011
21 Normandie Ave. and 182nd St.	0.532	A	0.547	A	0.015
22 Normandie Ave. and I-405 NB On-Off Ramp	0.614	B	0.688	B	0.074
23 I-405 SB Off Ramp and 190th St.	0.918	E	1.007	F	0.089
24 Normandie Ave. and 190th St.	1.057	F	1.147	F	0.090
25 Normandie Ave. and Project Driveway/Fra	0.506	A	0.535	A	0.029
26 Normandie Ave. and Torrance Bl.	0.659	B	0.700	B	0.041
27 Normandie Ave. and Carson St.	0.834	D	0.845	D	0.011
28 Sepulveda Bl. and Normandie Ave.	0.795	C	0.799	C	0.004
29 Pacific Coast Hwy. and Normandie Ave.	0.581	A	0.585	A	0.004
30 Vermont Ave. and Artesia Bl.	0.894	D	0.899	D	0.005
31 Vermont Ave. and 190th St.	1.074	F	1.092	F	0.018
32 Vermont Ave. and Torrance Bl.	0.753	C	0.759	C	0.006
33 Vermont Ave. and Carson St.	0.871	D	0.873	D	0.002
34 I-110 SB Off Ramp and 190th St.	0.799	C	0.815	D	0.016
35 I-110 NB on Ramp and 190th St.	0.939	E	0.967	E	0.028
36 Figueroa St. and 190th St.	0.771	C	0.786	C	0.015
37 I-110 SB On/Off Ramps and Hamilton Ave.	0.502	A	0.503	A	0.001
38 Figueroa St. and I-110 NB On/Off Ramps	0.806	D	0.807	D	0.001
39 Hamilton Ave. and Torrance Bl.	0.771	C	0.793	C	0.022
40 Torrance Bl. and Figueroa St.	0.836	D	0.847	D	0.011
41 I-110 SB On/Off Ramps and Carson St.	0.773	C	0.774	C	0.001

"*" denotes a significant impact.

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Year 1998 Project Traffic Conditions
A.M. Peak Hour

No Intersection	-- Future (1998) Conditions --					
	W/O Project		With Phase 1 Proj.		Impact	
	CMA	LOS	CMA	LOS		
1 Hawthorne Bl. and 190th St.	1.038	F	1.039	F	0.001	
2 Crenshaw Bl. and 182nd St.	0.930	E	0.930	E	0.000	
3 Crenshaw Bl. and I-405 SB On/Off Ramps	1.018	F	1.019	F	0.001	
4 Crenshaw Bl. and 190th St.	1.266	F	1.267	F	0.001	
5 Crenshaw Bl. and Del Amo Bl.	0.840	D	0.841	D	0.001	
6 I-405 NB On/Off Ramps and 182nd St.	0.897	D	0.897	D	0.000	
7 Western Ave. and Artesia Bl.	1.009	F	1.010	F	0.001	
8 Western Ave. and 182nd St.	0.465	A	0.467	A	0.002	
9 Western Ave. and I-405 NB On/Off Ramps	0.631	B	0.632	B	0.001	
10 I-405 SB On/Off Ramps and 190th St.	1.119	F	1.123	F	0.004	
11 Western Ave. and 190th St.	0.761	C	0.761	C	0.000	
12 Western Ave. and 195th St.	0.507	A	0.507	A	0.000	
13 Western Ave. and Project Driveway	0.392	A	0.397	A	0.005	
14 Western Ave. and Del Amo Bl.	0.759	C	0.763	C	0.004	
15 Western Ave. and Torrance Bl.	0.700	B	0.702	C	0.002	
16 Western Ave. and Carson St.	0.814	D	0.815	D	0.001	
17 Western Ave. and Sepulveda Bl.	1.020	F	1.020	F	0.000	
18 Western Ave. and Pacific Coast Highway	0.992	E	0.992	E	0.000	
19 Project Driveway and 190th St.	0.557	A	0.555	A	-0.002	
20 Artesia Bl. and Normandie Ave.	0.890	D	0.892	D	0.002	
21 Normandie Ave. and 182nd St.	0.336	A	0.337	A	0.001	
22 Normandie Ave. and I-405 NB On-Off Ramp	0.573	A	0.581	A	0.008	
23 I-405 SB Off Ramp and 190th St.	0.534	A	0.558	A	0.024	
24 Normandie Ave. and 190th St.	0.792	C	0.805	D	0.013	
25 Normandie Ave. and Project Driveway/Fra	0.394	A	0.399	A	0.005	
26 Normandie Ave. and Torrance Bl.	0.671	B	0.680	B	0.009	
27 Normandie Ave. and Carson St.	0.631	B	0.633	B	0.002	
28 Sepulveda Bl. and Normandie Ave.	0.723	C	0.724	C	0.001	
29 Pacific Coast Hwy. and Normandie Ave.	0.515	A	0.515	A	0.000	
30 Vermont Ave. and Artesia Bl.	0.929	E	0.929	E	0.000	
31 Vermont Ave. and 190th St.	0.746	C	0.749	C	0.003	
32 Vermont Ave. and Torrance Bl.	0.712	C	0.713	C	0.001	
33 Vermont Ave. and Carson St.	0.765	C	0.765	C	0.000	
34 I-110 SB Off Ramp and 190th St.	0.472	A	0.478	A	0.006	
35 I-110 NB on Ramp and 190th St.	0.483	A	0.488	A	0.005	
36 Figueroa St. and 190th St.	0.520	A	0.523	A	0.003	
37 I-110 SB On/Off Ramps and Hamilton Ave.	0.476	A	0.476	A	0.000	
38 Figueroa St. and I-110 NB On/Off Ramps	0.722	C	0.723	C	0.001	
39 Hamilton Ave. and Torrance Bl.	0.787	C	0.790	C	0.003	
40 Torrance Bl. and Figueroa St.	0.698	B	0.700	B	0.002	
41 I-110 SB On/Off Ramps and Carson St.	0.916	E	0.916	E	0.000	

J:\ICAP4\HRBRGATE\PH1REV01 RL

Crain & Associates
August 29, 1996
DRAFT

Year 1998 Project Traffic Conditions
Peak Hour Summary

Number of intersections with significant impacts:

	With Project
-----	-----
AM Peak Hour Only:	0
PM Peak Hour Only:	8
AM & PM Peak Hour:	0
-----	-----
Total AM Peak Hour:	0
Total PM Peak Hour:	8
-----	-----
Total (AM or PM):	8

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APPENDIX B

TDM ORDINANCE (NO.168,700)

SUBJECT : TRANSPORTATION DEMAND MANAGEMENT AND TRIP REDUCTION MEASURES

ORDINANCE NO. 168700

An ordinance adding Subsection J to Section 12.25 of the Los Angeles Municipal Code to provide transportation demand management features within new buildings which would facilitate the use of alternative transportation modes to decrease dependency on vehicles carrying only one person.

THE PEOPLE OF THE CITY OF LOS ANGELES
DO ORDAIN AS FOLLOWS:

Section 1. A new Subsection J is hereby added to Section 12.25 of the Los Angeles Municipal Code to read:
J. Transportation Demand Management and Trip Reduction Measures.

1. **DEFINITIONS.** For the purpose of this section, certain words and terms are defined as follows:

Carpool. A vehicle carrying two to five persons to and from work on a regular schedule.
Development. The construction of new non-residential floor area.

Gross Floor Area. That area in square feet confined within the outside surface of the exterior walls of a building, as calculated by adding the total square footage of each of the floors in the building, except for that square footage devoted to vehicle parking and necessary interior driveways and ramps.

Preferential Parking. Parking spaces, designated or assigned through use of a sign or painted space markings for Carpools or Vanpools, that are provided in a location more convenient to the entrance for the place of employment than parking spaces provided for single-occupant vehicles.

Transportation Demand Management (TDM). The alteration of travel behavior through programs of incentives, services, and policies, including encouraging the use of alternatives to single-occupant vehicles such as public transit, cycling, walking, carpooling/vanpooling and changes in work schedule that move trips out of the peak period or eliminate them altogether (as in the case in telecommuting or compressed work weeks).

Trip Reduction. Reduction in the number of work-related trips made by single-occupant vehicles.

Vanpool. A vehicle carrying six or more persons to and from work on a regular schedule, and on a prepaid basis.

Vehicle. Any motorized form of transportation, including but not limited to automobiles, vans, buses and motorcycles.

2. **APPLICABILITY.** This subdivision applies only to the construction of new non-residential gross floor area. Prior to the issuance of a building permit, the owner/applicant shall agree, by way of a covenant that runs with the land, to provide and maintain in a state of good repair the following applicable transportation demand management and trip reduction measures.

3. **REQUIREMENTS:**

(a) Development in excess of 25,000 square feet of gross floor area. The owner shall provide a bulletin board, display case, or kiosk (displaying transportation information) where the greatest number of employees are likely to see it. The transportation information displayed should include, but is not limited to, the following:

(1) Current routes and schedules for public transit serving the site;

(2) Telephone numbers for referrals on transportation information including numbers for the regional ride-sharing agency and local transit operations;

(3) Ride-sharing promotion material supplied by commuter-oriented organizations;

(4) Regional/local bicycle route and facility information;

(5) A listing of on-site services or facilities which are available for carpools, vanpools, bicyclists, and transit riders.

(b) Development in excess of 50,000 square feet of gross floor area. The owner shall comply with Paragraph (a) above and in addition shall provide:

(1) A designated parking area for employee carpools and vanpools as close as practical to the main pedestrian entrance(s) of the building(s). This area shall include at least ten percent of the parking spaces required for the site. The spaces shall be signed and striped sufficient to meet the employee demand for such spaces. The carpool/vanpool parking area shall be identified on the driveway and circulation plan upon application for a building permit;

(2) One permanent, clearly identified (signed and striped) carpool/vanpool parking space for the first 50,000 to 100,000 square feet of gross floor area and one additional permanent, clearly identified (signed and striped) carpool/vanpool parking space for any development over 100,000 square feet of gross floor area;

(3) Parking spaces clearly identified (signed and striped) shall be provided in the designated carpool/vanpool parking area at any time during the building's occupancy sufficient to meet employee demand for such spaces. Absent such demand, parking spaces within the designated carpool/vanpool parking area may be used by other vehicles;

(4) No signed and striped parking spaces for carpool/vanpool parking shall displace any handicapped parking;

(5) A statement that preferential carpool/vanpool spaces are available on-site and a description of the method for obtaining permission to use such spaces shall be included on the required transportation information board;

(6) A minimum vertical clearance of 7 feet 2 inches shall be provided for all parking spaces and accessways used by vanpool vehicles when located within a parking structure;

(7) Bicycle parking shall be provided in accordance with Section 12.21 A 16 of this Code.

(c) Development in excess of 100,000 square feet of gross floor area. The owner shall comply with Paragraphs (a) and (b) above and shall provide:

(1) A safe and convenient area in which carpool/vanpool vehicles may load and unload passengers other than in their assigned parking area;

(2) Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development;

(3) If determined necessary by the City to mitigate the project impact, bus stop improvements shall be provided. The City will consult with the local bus service providers in determining

appropriate improvements. When locating bus stops and/or planning building entrances, entrances shall be designed to provide safe and efficient access to nearby transit stations/stops;

(4) Safe and convenient access from the external circulation system to bicycle parking facilities on-site.

4. **EXEMPTIONS.** The provisions of this subsection shall not apply to developments for which an application has been deemed complete by the City pursuant to Government Code Section 65943, or for which a Notice of Preparation for a Draft Environmental Impact Report has been circulated or for which plans sufficient for a complete plan check were accepted by the Department of Building and Safety, on or before the effective date of this ordinance.

5. MONITORING. The Department of Transportation shall be responsible for monitoring the owner/applicant's continual implementation and maintenance of the project trip reduction features required by this ordinance.

6. ENFORCEMENT. Applicants shall execute and record a Covenant and Agreement that the trip reduction features required by this ordinance will be maintained, that required material specified in Subdivision 3 (a) (1)-(5) will be continually posted, and that additional carpool/vanpool spaces within the designated preferential area will be signed and striped for the use of ride-sharing employees based on demand for such spaces. The Covenant and Agreement shall be acceptable to the Department of Transportation.

7. HARDSHIP EXEMPTION. In cases of extreme hardship, duly established to its satisfaction, the City Council, acting in its legislative capacity, and by resolution, may grant an exemption from any/or all the provisions of this ordinance. In granting such an exemption, the City Council shall make the following findings:

(a) Specific features of the development make it infeasible to satisfy all of the provisions of this subsection; and

(b) The applicant has committed to provide equivalent alternative measures to reduce vehicle trips.

Sec. 2. URGENT CLAUSE. The City Council declares that this ordinance is required for the immediate preservation of the public peace, health and safety. The City is required to comply, in a timely manner, with the State mandated Congestion Management Program. This ordinance

would prevent the potential loss to the City of millions of dollars in gas tax revenues. The loss of these funds would result in a threat to the peace, health and safety of the citizens of this City because the repair of essential streets and highways would not be feasible without the State funds. Accidents would occur and congestion due to impassable streets would result in pollution inimicable to the health and safety of the residents of the City. For these reasons this ordinance shall become effective upon publication, pursuant to Section 218 of the Los Angeles City Charter.

Sec. 3. The City Clerk shall certify to the passage of this ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles.

I hereby certify that the foregoing ordinance was passed by the Council of the City of Los Angeles, at its meeting of MAR 23 1993

ELIAS MARTINEZ, City Clerk.

By [Signature] Deputy.

Approved MAR 26 1993

Approved as to Form and Legality

3/17/93
JAMES K. HAHN, City Attorney.

By [Signature]

93-0456
File No.

City Clerk Form 21

Seal of the City of Los Angeles
or the City Planning Commission

MAR 16 1993

See signature report
[Signature]
Chairman of Planning

APPENDIX C

SHARED PARKING ANALYSIS

SUMMARY OF SEASONAL PEAK SHARED PARKING DEMANDS

MONTH	CINEMA	REST.	RETAIL	TOTAL
WEEKEND SHARED PARKING REQUIREMENTS				
January	454	86	923	1,463
February	353	81	923	1,357
March	252	97	994	1,343
April	353	97	994	1,444
May	353	103	994	1,449
June	504	108	1,065	1,677
July	504	108	1,065	1,677
August	353	92	1,065	1,510
September	403	86	1,065	1,555
October	353	86	1,065	1,504
November	252	86	1,136	1,474
December	252	97	1,420	1,769
Annual	252	97	1,420	1,769

WEEKDAY SHARED PARKING REQUIREMENTS

January	540	192	763	1,495
February	420	180	763	1,363
March	300	216	822	1,338
April	420	216	822	1,458
May	420	228	822	1,470
June	600	240	880	1,720
July	600	240	880	1,720
August	420	204	880	1,504
September	480	192	880	1,552
October	420	192	880	1,492
November	300	192	939	1,431
December	210	151	1,349	1,710
Annual	600	240	880	1,720

CINEMA AND RESTAURANT PARKING RATES ADJUSTED FOR CAPTIVE MARKET

	CINEMA	REST.	RETAIL
CITY CODE STAND ALONE			
PARKING RATE	0.20	10.00	4.00
INTERNAL CAPTURE RATE	10%	20%	0%
ADJUSTED RATE	0.18	8.00	4.00

HARBOR GATEWAY CENTER DESCRIPTION

SIZE	4,000	30.000	355.000
UNITS	SEATS	SQ.FT.	SQ.FT.

	CINEMA	REST.	RETAIL	TOTAL
STAND ALONE SPACES	800	300	1420	2,520
SPACES W/ INTERNAL CAPTURE	720	240	1420	2,380

BASE WEEKEND SHARED PARKING REQUIREMENTS
WITHOUT SEASONAL ADJUSTMENTS

TIME OF DAY	CINEMA	REST.	RETAIL	TOTAL
6 AM	0	0	0	0
7	0	5	43	47
8	0	7	142	149
9	0	14	426	440
10	0	19	639	658
11	0	24	1,037	1,061
12 Noon	216	72	1,207	1,495
1 PM	504	108	1,349	1,961
2	504	108	1,420	2,032
3	504	108	1,420	2,032
4	504	108	1,278	1,890
5	504	144	1,065	1,713
6	576	216	923	1,715
7	648	228	852	1,728
8	720	240	781	1,741
9	720	240	568	1,528
10	720	228	540	1,488
11	576	204	185	965
12 Midnight	504	168	0	672
WITH SHARED USE	504	108	1,420	2,032

CINEMA AND RESTAURANT PARKING RATES ADJUSTED FOR CAPTIVE MARKET

	CINEMA	REST.	RETAIL
CITY CODE STAND ALONE			
PARKING RATE	0.20	10.00	4.00
INTERNAL CAPTURE RATE	10%	20%	0%
ADJUSTED RATE	0.18	8.00	4.00

HARBOR GATEWAY CENTER DESCRIPTION

SIZE	4,000	30.000	355.000
UNITS	SEATS	SQ.FT.	SQ.FT.

	CINEMA	REST.	RETAIL	TOTAL
STAND ALONE SPACES	800	300	1420	2,520
SPACES W/ INTERNAL CAPTURE	720	240	1420	2,380

BASE WEEKDAY SHARED PARKING REQUIREMENTS
WITHOUT SEASONAL ADJUSTMENTS

TIME OF DAY	CINEMA	REST.	RETAIL	TOTAL
6 AM	0	0	0	0
7	0	5	108	113
8	0	12	243	255
9	0	24	567	591
10	0	48	917	965
11	0	72	1,174	1,246
12 Noon	180	120	1,309	1,609
1 PM	420	168	1,349	1,937
2	420	144	1,309	1,873
3	420	144	1,282	1,846
4	420	120	1,174	1,714
5	420	168	1,066	1,654
6	480	216	1,106	1,802
7	540	240	1,201	1,981
8	600	240	1,174	2,014
9	600	240	823	1,663
10	600	216	432	1,248
11	480	168	175	823
12 Midnight	420	120	0	540
WITH SHARED USE	600	240	1,174	2,014

January

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	90%	80%	65%	
WEEKEND SHARED PARKING REQUIREMENTS				
6 AM	0	0	0	0
7	0	4	28	32
8	0	6	92	98
9	0	12	277	288
10	0	15	415	431
11	0	19	674	693
12 Noon	194	58	785	1,037
1 PM	454	86	877	1,417
2	454	86	923	1,463
3	454	86	923	1,463
4	454	86	831	1,371
5	454	115	692	1,261
6	518	173	600	1,291
7	583	182	554	1,319
8	648	192	508	1,348
9	648	192	369	1,209
10	648	182	351	1,181
11	518	163	120	802
12 Midnight	454	134	0	588
WITH SHARED USE	454	86	923	1,463

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	70	74
8	0	10	158	167
9	0	19	368	387
10	0	38	596	635
11	0	58	763	820
12 Noon	162	96	851	1,109
1 PM	378	134	877	1,389
2	378	115	851	1,344
3	378	115	833	1,326
4	378	96	763	1,237
5	378	134	693	1,205
6	432	173	719	1,324
7	486	192	780	1,458
8	540	192	763	1,495
9	540	192	535	1,267
10	540	173	281	993
11	432	134	114	680
12 Midnight	378	96	0	474
WITH SHARED USE	540	192	763	1,495

February

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	70%	75%	65%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	28	31
8	0	5	92	98
9	0	11	277	288
10	0	14	415	430
11	0	18	674	692
12 Noon	151	54	785	990
1 PM	353	81	877	1,311
2	353	81	923	1,357
3	353	81	923	1,357
4	353	81	831	1,265
5	353	108	692	1,153
6	403	162	600	1,165
7	454	171	554	1,178
8	504	180	508	1,192
9	504	180	369	1,053
10	504	171	351	1,026
11	403	153	120	676
12 Midnight	353	126	0	479
WITH SHARED USE	353	81	923	1,357

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	70	74
8	0	9	158	167
9	0	18	368	386
10	0	36	596	632
11	0	54	763	817
12 Noon	126	90	851	1,067
1 PM	294	126	877	1,297
2	294	108	851	1,253
3	294	108	833	1,235
4	294	90	763	1,147
5	294	126	693	1,113
6	336	162	719	1,217
7	378	180	780	1,338
8	420	180	763	1,363
9	420	180	535	1,135
10	420	162	281	863
11	336	126	114	576
12 Midnight	294	90	0	384
WITH SHARED USE	420	180	763	1,363

March

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	50%	90%	70%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	30	34
8	0	6	99	106
9	0	13	298	311
10	0	17	447	465
11	0	22	726	747
12 Noon	108	65	845	1,018
1 PM	252	97	944	1,294
2	252	97	994	1,343
3	252	97	994	1,343
4	252	97	895	1,244
5	252	130	746	1,127
6	288	194	646	1,129
7	324	205	596	1,126
8	360	216	547	1,123
9	360	216	398	974
10	360	205	378	943
11	288	184	129	601
12 Midnight	252	151	0	403
WITH SHARED USE	252	97	994	1,343

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	76	80
8	0	11	170	181
9	0	22	397	418
10	0	43	642	685
11	0	65	822	886
12 Noon	90	108	916	1,114
1 PM	210	151	944	1,306
2	210	130	916	1,256
3	210	130	897	1,237
4	210	108	822	1,140
5	210	151	746	1,107
6	240	194	774	1,209
7	270	216	840	1,326
8	300	216	822	1,338
9	300	216	576	1,092
10	300	194	302	797
11	240	151	123	514
12 Midnight	210	108	0	318
WITH SHARED USE	300	216	822	1,338

April

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	70%	90%	70%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	30	34
8	0	6	99	106
9	0	13	298	311
10	0	17	447	465
11	0	22	726	747
12 Noon	151	65	845	1,061
1 PM	353	97	944	1,394
2	353	97	994	1,444
3	353	97	994	1,444
4	353	97	895	1,345
5	353	130	746	1,228
6	403	194	646	1,244
7	454	205	596	1,255
8	504	216	547	1,267
9	504	216	398	1,118
10	504	205	378	1,087
11	403	184	129	716
12 Midnight	353	151	0	504
WITH SHARED USE	353	97	994	1,444

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	76	80
8	0	11	170	181
9	0	22	397	418
10	0	43	642	685
11	0	65	822	886
12 Noon	126	108	916	1,150
1 PM	294	151	944	1,390
2	294	130	916	1,340
3	294	130	897	1,321
4	294	108	822	1,224
5	294	151	746	1,191
6	336	194	774	1,305
7	378	216	840	1,434
8	420	216	822	1,458
9	420	216	576	1,212
10	420	194	302	917
11	336	151	123	610
12 Midnight	294	108	0	402
WITH SHARED USE	420	216	822	1,458

May

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	70%	95%	70%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	30	34
8	0	7	99	106
9	0	14	298	312
10	0	18	447	466
11	0	23	726	748
12 Noon	151	68	845	1,065
1 PM	353	103	944	1,400
2	353	103	994	1,449
3	353	103	994	1,449
4	353	103	895	1,350
5	353	137	746	1,235
6	403	205	646	1,255
7	454	217	596	1,267
8	504	228	547	1,279
9	504	228	398	1,130
10	504	217	378	1,098
11	403	194	129	726
12 Midnight	353	160	0	512
WITH SHARED USE	353	103	994	1,449

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	76	80
8	0	11	170	181
9	0	23	397	419
10	0	46	642	688
11	0	68	822	890
12 Noon	126	114	916	1,156
1 PM	294	160	944	1,398
2	294	137	916	1,347
3	294	137	897	1,328
4	294	114	822	1,230
5	294	160	746	1,200
6	336	205	774	1,316
7	378	228	840	1,446
8	420	228	822	1,470
9	420	228	576	1,224
10	420	205	302	927
11	336	160	123	618
12 Midnight	294	114	0	408
WITH SHARED USE	420	228	822	1,470

June

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	100%	100%	75%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	32	37
8	0	7	107	114
9	0	14	320	334
10	0	19	479	498
11	0	24	777	801
12 Noon	216	72	905	1,193
1 PM	504	108	1,012	1,624
2	504	108	1,065	1,677
3	504	108	1,065	1,677
4	504	108	959	1,571
5	504	144	799	1,447
6	576	216	692	1,484
7	648	228	639	1,515
8	720	240	586	1,546
9	720	240	426	1,386
10	720	228	405	1,353
11	576	204	138	918
12 Midnight	504	168	0	672
WITH SHARED USE	504	108	1,065	1,677

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	81	86
8	0	12	182	194
9	0	24	425	449
10	0	48	688	736
11	0	72	880	952
12 Noon	180	120	981	1,281
1 PM	420	168	1,012	1,600
2	420	144	981	1,545
3	420	144	961	1,525
4	420	120	880	1,420
5	420	168	799	1,387
6	480	216	830	1,526
7	540	240	900	1,680
8	600	240	880	1,720
9	600	240	617	1,457
10	600	216	324	1,140
11	480	168	132	780
12 Midnight	420	120	0	540
WITH SHARED USE	600	240	880	1,720

July

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	100%	100%	75%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	32	37
8	0	7	107	114
9	0	14	320	334
10	0	19	479	498
11	0	24	777	801
12 Noon	216	72	905	1,193
1 PM	504	108	1,012	1,624
2	504	108	1,065	1,677
3	504	108	1,065	1,677
4	504	108	959	1,571
5	504	144	799	1,447
6	576	216	692	1,484
7	648	228	639	1,515
8	720	240	586	1,546
9	720	240	426	1,386
10	720	228	405	1,353
11	576	204	138	918
12 Midnight	504	168	0	672
WITH SHARED USE	504	108	1,065	1,677

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	5	81	86
8	0	12	182	194
9	0	24	425	449
10	0	48	688	736
11	0	72	880	952
12 Noon	180	120	981	1,281
1 PM	420	168	1,012	1,600
2	420	144	981	1,545
3	420	144	961	1,525
4	420	120	880	1,420
5	420	168	799	1,387
6	480	216	830	1,526
7	540	240	900	1,680
8	600	240	880	1,720
9	600	240	617	1,457
10	600	216	324	1,140
11	480	168	132	780
12 Midnight	420	120	0	540
WITH SHARED USE	600	240	880	1,720

August

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	70%	85%	75%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	32	36
8	0	6	107	113
9	0	12	320	332
10	0	16	479	496
11	0	20	777	798
12 Noon	151	61	905	1,118
1 PM	353	92	1,012	1,456
2	353	92	1,065	1,510
3	353	92	1,065	1,510
4	353	92	959	1,403
5	353	122	799	1,274
6	403	184	692	1,279
7	454	194	639	1,286
8	504	204	586	1,294
9	504	204	426	1,134
10	504	194	405	1,103
11	403	173	138	715
12 Midnight	353	143	0	496
WITH SHARED USE	353	92	1,065	1,510

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	81	85
8	0	10	182	192
9	0	20	425	445
10	0	41	688	729
11	0	61	880	941
12 Noon	126	102	981	1,209
1 PM	294	143	1,012	1,449
2	294	122	981	1,398
3	294	122	961	1,378
4	294	102	880	1,276
5	294	143	799	1,236
6	336	184	830	1,349
7	378	204	900	1,482
8	420	204	880	1,504
9	420	204	617	1,241
10	420	184	324	927
11	336	143	132	610
12 Midnight	294	102	0	396
WITH SHARED USE	420	204	880	1,504

September

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	80%	80%	75%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	32	36
8	0	6	107	112
9	0	12	320	331
10	0	15	479	495
11	0	19	777	797
12 Noon	173	58	905	1,136
1 PM	403	86	1,012	1,501
2	403	86	1,065	1,555
3	403	86	1,065	1,555
4	403	86	959	1,448
5	403	115	799	1,317
6	461	173	692	1,326
7	518	182	639	1,340
8	576	192	586	1,354
9	576	192	426	1,194
10	576	182	405	1,163
11	461	163	138	762
12 Midnight	403	134	0	538
WITH SHARED USE	403	86	1,065	1,555

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	81	85
8	0	10	182	192
9	0	19	425	444
10	0	38	688	726
11	0	58	880	938
12 Noon	144	96	981	1,221
1 PM	336	134	1,012	1,482
2	336	115	981	1,433
3	336	115	961	1,412
4	336	96	880	1,312
5	336	134	799	1,270
6	384	173	830	1,386
7	432	192	900	1,524
8	480	192	880	1,552
9	480	192	617	1,289
10	480	173	324	977
11	384	134	132	650
12 Midnight	336	96	0	432
WITH SHARED USE	480	192	880	1,552

October

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	70%	80%	75%	
WEEKEND SHARED PARKING REQUIREMENTS				
6 AM	0	0	0	0
7	0	4	32	36
8	0	6	107	112
9	0	12	320	331
10	0	15	479	495
11	0	19	777	797
12 Noon	151	58	905	1,114
1 PM	353	86	1,012	1,451
2	353	86	1,065	1,504
3	353	86	1,065	1,504
4	353	86	959	1,398
5	353	115	799	1,267
6	403	173	692	1,268
7	454	182	639	1,275
8	504	192	586	1,282
9	504	192	426	1,122
10	504	182	405	1,091
11	403	163	138	705
12 Midnight	353	134	0	487
WITH SHARED USE	353	86	1,065	1,504

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	81	85
8	0	10	182	192
9	0	19	425	444
10	0	38	688	726
11	0	58	880	938
12 Noon	126	96	981	1,203
1 PM	294	134	1,012	1,440
2	294	115	981	1,391
3	294	115	961	1,370
4	294	96	880	1,270
5	294	134	799	1,228
6	336	173	830	1,338
7	378	192	900	1,470
8	420	192	880	1,492
9	420	192	617	1,229
10	420	173	324	917
11	336	134	132	602
12 Midnight	294	96	0	390
WITH SHARED USE	420	192	880	1,492

November

	CINEMA	REST.	RETAIL	TOTAL
Percent of Peak Month	50%	80%	80%	

WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	34	38
8	0	6	114	119
9	0	12	341	352
10	0	15	511	527
11	0	19	829	848
12 Noon	108	58	966	1,131
1 PM	252	86	1,079	1,418
2	252	86	1,136	1,474
3	252	86	1,136	1,474
4	252	86	1,022	1,361
5	252	115	852	1,219
6	288	173	738	1,199
7	324	182	682	1,188
8	360	192	625	1,177
9	360	192	454	1,006
10	360	182	432	974
11	288	163	148	599
12 Midnight	252	134	0	386
WITH SHARED USE	252	86	1,136	1,474

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	86	90
8	0	10	194	204
9	0	19	453	472
10	0	38	734	772
11	0	58	939	997
12 Noon	90	96	1,047	1,233
1 PM	210	134	1,079	1,424
2	210	115	1,047	1,372
3	210	115	1,025	1,350
4	210	96	939	1,245
5	210	134	853	1,197
6	240	173	885	1,298
7	270	192	960	1,422
8	300	192	939	1,431
9	300	192	658	1,150
10	300	173	345	818
11	240	134	140	515
12 Midnight	210	96	0	306
WITH SHARED USE	300	192	939	1,431

December

Percent of Peak Month	CINEMA 50%	REST. 90%	RETAIL 100%	TOTAL
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WEEKEND SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	43	47
8	0	6	142	148
9	0	13	426	439
10	0	17	639	656
11	0	22	1,037	1,058
12 Noon	108	65	1,207	1,380
1 PM	252	97	1,349	1,698
2	252	97	1,420	1,769
3	252	97	1,420	1,769
4	252	97	1,278	1,627
5	252	130	1,065	1,447
6	288	194	923	1,405
7	324	205	852	1,381
8	360	216	781	1,357
9	360	216	568	1,144
10	360	205	540	1,105
11	288	184	185	656
12 Midnight	252	151	0	403
WITH SHARED USE	252	97	1,420	1,769

WEEKDAY SHARED PARKING REQUIREMENTS

6 AM	0	0	0	0
7	0	4	108	112
8	0	11	243	254
9	0	22	567	588
10	0	43	917	961
11	0	65	1,174	1,238
12 Noon	90	108	1,309	1,507
1 PM	210	151	1,349	1,710
2	210	130	1,309	1,648
3	210	130	1,282	1,621
4	210	108	1,174	1,492
5	210	151	1,066	1,427
6	240	194	1,106	1,541
7	270	216	1,201	1,687
8	300	216	1,174	1,690
9	300	216	823	1,339
10	300	194	432	926
11	240	151	175	567
12 Midnight	210	108	0	318
WITH SHARED USE	210	151	1,349	1,710

WEEKEND HOURLY ACCUMULATION BY PERCENTAGE OF PEAK HOUR

TIME OF DAY	CINEMA	RESTAURANT	RETAIL
6 AM	-	-	-
7	-	2%	3%
8	-	3%	10%
9	-	6%	30%
10	-	8%	45%
11	-	10%	73%
12 Noon	30%	30%	85%
1 PM	70%	45%	95%
2	70%	45%	100%
3	70%	45%	100%
4	70%	45%	90%
5	70%	60%	75%
6	80%	90%	65%
7	90%	95%	60%
8	100%	100%	55%
9	100%	100%	40%
10	100%	95%	38%
11	80%	85%	13%
12 Midnight	70%	70%	-
Weekend Peak Demand/Rate	100%	100%	100%

WEEKDAY HOURLY ACCUMULATION BY PERCENTAGE OF PEAK HOUR

TIME OF DAY	CINEMA	RESTAURANT	RETAIL
6 AM	-	-	-
7	-	2%	8%
8	-	5%	18%
9	-	10%	42%
10	-	20%	68%
11	-	30%	87%
12 Noon	30%	50%	97%
1 PM	70%	70%	100%
2	70%	60%	97%
3	70%	60%	95%
4	70%	50%	87%
5	70%	70%	79%
6	80%	90%	82%
7	90%	100%	89%
8	100%	100%	87%
9	100%	100%	61%
10	100%	90%	32%
11	80%	70%	13%
12 Midnight	70%	50%	-
Weekday Peak Demand/Rate	83%	100%	95%

APPENDIX D

CRITICAL MOVEMENT ANALYSIS CALCULATIONS

(under separate cover)